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**New Trends in Sustainable Business and Consumption
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Associate Professor Daniela Rupo

Daniela Rupo, PhD, is Associate Professor in Accounting and Business Administration at the Department of Economics of the University of Messina (Italy). She has been involved in several national and international projects related to her main research interests: Corporate Social Responsibility, Intellectual Capital, Integrated and Sustainability Reporting, Accounting in the Public Sector, Business valuation. She is author/editor of 5 scientific volumes and about 70 articles and book chapters, published on prestigious national and international journals and series of studies.

Șerban Toader

Șerban Toader is an Independent Chartered Accountant, Financial Auditor, and Consultant. He has an Executive MBA from Ecole Nationale des Ponts et Chaussées, Paris. Between 2007 – 2018, Șerban Toader has been the Senior Partner (CEO equivalent) at KPMG in Romania and Moldova. He also contributed to policymaking at the regional level through his membership of the Board of KPMG Central and Eastern Europe. Șerban is member of The Academic Advisory Council of the Bucharest University of Economic Studies. Over the time he acted in a non-executive capacity in United Way Romania (Chairman of the Board 2016 - 2018), Foreign Investment Council Romania (Vice President 2010 - 2012), Aspen Institute Romania.

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CULINARY HABITS, BETWEEN TRADITION AND CHANGE. CASE STUDY: ROMANIANS IN PARMA, ITALY

Laetitia Casangiu¹

¹⁾ The Bucharest University of Economic Studies, Romania

E-mail: laetitia.casangiu@gmail.com

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Abstract

In this study I will point out the eating habits of Romanians established in the region of Parma, a city with a powerful culinary tradition, recently awarded the title of “Creative City for Gastronomy” by UNESCO. The Romanian community established in this area are the most numerous among all foreign minorities and may be considered a young minority, of first generation, which have developed considerably in the last years. This high-impact phenomenon, both for Romania, their state of origin, and for Italy, the adoptive country, is worth the attention of researchers from more perspectives: linguistic, anthropological, social, economic, and historical. I focused my study on gastronomic features in order to see the progress of food behaviour patterns in a Romanian population who immigrated in an area with a strong vocation in gastronomy. As methods of research, I used the comparative study of specialized publications, completed by the statistical analysis of information resulted after the distribution of a questionnaire and direct interviews.

Keywords

food, gastronomy, culture, immigration, traditions, culinary habits, migration, ethnicity, culinary.

JEL Classification

A13, J15

Introduction

Much ink has been spilled lately on cuisine, food habits and gastronomy in the specialized literature, but the term ‘gastronomy’, which represents a linguistic calque from the Greek *gastronymía*, was already introduced in modern languages through a French branch at the beginning of the 19th century, aiming ‘to indicate the art of cuisine, food preparation, manners of presenting and tasting food products’ (Petrini, 2007). In 1825, after a first remark in 1801 in the didactic poem “*La gastronomie ou l'homme des champs à table*”, written by Joseph de Berchoux, the term gastronomy was introduced in the Dictionary of the French Academy.

The most famous definition is the one given by J.A. Brillat Savarin in 1826: „Gastronomy is the intelligent knowledge of whatever concerns man’s nourishment. Its purpose is to watch over his conservation by suggesting the best possible sustenance for him” (Brillat Savarin, 2011-reedited). The French gastronome listed the disciplines which were interacting with this science in that era: natural history, physics, cooking, commerce and political economy, as well as the people involved in food preparation: farmers, viticulturists, fishermen and cooks. The current evolution of society imposes an update of the original definition as ‘a complex and interdisciplinary science which studies food and everything about it’ and ‘which implies and meets food-related knowledge, as material elements - in all its phases - and as a cultural element, traditionally transformed or not, equally changed or not, narrated or analysed more or less scientifically’ (Petrini, 2007). Gastronomy helps us discover the best qualities of food products, making a distinction between basic and accessory foods. (Nistoreanu et al 2013). Food behaviours are influenced by the environment in which the human being lives, their social life, religion, cultural and genetic heritage, by the conditions in which they develop their activities and the time they dedicate to food. (Nistoreanu et al, 2019). Like any other cultural element, culinary habits are situated at the meeting point between tradition (when we talk about knowledge, methods and values inherited from generation to generation) and innovation (when the knowledge, methods and values modify the situation of the human being with respect to the context in which they live, leading to the experimentation of new tastes) (Montanari, 2018).

The language, traditions, beliefs, together with culinary habits, are all part of one’s cultural baggage. All these ‘create the feeling of belongingness or social differentiation and all together transmit the values of the society, being inserted right in the heart of one’s identity-building process’. (Stano, 2015). Nevertheless, the culture is being learnt, it is not being inherited, it is being passed from generation to generation through language and socialization (Helman, 2007).

In this study we intend to observe the food behaviour for a sample of people belonging to the Romanian community in Parma, which is aimed to detect their food tendencies in the context of integrating in a reality of food habits which are sometimes very different from the Romanian ones and which have a marked individuality at the highest level of gastronomy.

The migratory adaptation process to the new reality in which the immigrant must integrate themselves is not linear, but it oscillates between the old habits of the country of provenance and the ones of the new space, which are strong and begin to prevail. Specialized literature indicates more types of behaviours. Usually, ‘first-generation immigrants remain emotionally connected to their culture of origin. They integrate themselves in the new society by adopting some of the values and occupations of the majority culture, but generally they are surrounded by a reference group composed of family and friends of the same ethnicity as themselves’ (Kittler et al., 2012). Other immigrants ‘become bicultural and this happens when the new dominant culture is seen to be complementary and not competitive with the ethnic minority from which the individual is part of. Positive aspects of both cultures are embraced and the individual develops the necessary abilities to operate with both cultures’ (Bookings, 1993). There are also extreme cases, where the immigrants are refractory to the new culture, integrally maintaining the habits of their country of provenance or, in opposite situations, they want to interrupt any connection with the past and invent a new identity (Romania, 2004).

The Romanian Community in the Province of Parma

Historical connections between Romanians and Italians are known to have existed for the last nineteen centuries, from the conquest of Dacia by the Emperor Trajan, in 106 BC. The most important migrating flows are registered in the period between the second half of the 18th century until the onset of the Second World War, when Romania became a country of destination for numerous Italians mainly coming from the regions of Friuli, Trentino, Veneto

and Puglia. Apart from seasonal workers, ten thousand Italians settled in Romania at that time, many of them remaining here after the war started.

After the fall of the Communist regime, following the closure of state factories and the reduction of workplaces, the material situation of many Romanians worsened, the emigration being for them the only suitable solution. In those years, an unprecedented phenomenon in the history of Romanian people came into existence and intensified around year 2000, when the requirement of entrance visas in the countries of the European Union was eliminated for short-term visits. Another important moment was the accession of Romania to the European Union, in 2007, which facilitated the migrating process, Italy being one of the countries preferred by Romanians, who started to establish especially in the most industrialized areas, in the North and Centre parts of the country (Caritas, 2010).

From the statistics provided by the Population Reference Bureau of the Province of Parma, a representative image of the total number of Romanians established on the territory of the Province emerges (the city of Parma and border localities are included). Therefore, on the 1st January 2019, 9.583 Romanians were registered in Parma, out of a population of 452.015 inhabitants.



Fig. no.1 Foreign citizens residing in Parma in 2019

Source: <http://www.provincia.parma.it/notizie/cresce-la-popolazione-del-parmense>

Culinary Tendencies, Between Tradition and Change

Among the main factors which determine the ethnic communities established in another country to maintain their own food habits, by often adopting a common food model, we can list the need of belongingness to a group and the desire to strengthen the feeling of identity (Balma, 2010). The integration process of Romanians in Italy implies numerous aspects, among which those related to their food habits.

In order to see the manner in which the food behaviour of the Romanian community in Parma is evolving, we chose the questionnaire and the direct interview as research instruments, which integrate the information given by specialized literature. The questionnaire, provided between September and October 2019 on the 'Google Questionnaire' platform and in printed form, was filled in by 155 people, a representative sample.

Most of respondents (74%) are female, with ages between 35 and 55 years old, perhaps because they have a greater tendency towards the theme suggested owing to socio-cultural factors. At the question 'How long have you been living in Italy?', most of the answers ranged between 10-15 years (68 people), then for the ranges 15-20 years (41) and 5-10 years (21), while 19 people declared to have been established in Italy for over 20 years and only 6 of them for 1-5 years. Consequently, the sample can be considered to belong to an immigration

of first generation, born and grown up in Romania and established in Italy at adult age. As regards the geographic area of provenance, most of them are from the region of Moldavia (42.5%), followed by Transylvania (19.6%), Muntenia (15%), Dobrogea (8.5%), Bucovina (4.6%), Maramureş (3.9%), Oltenia (3.9%), Banat (1.3%) and Crişana (1.3%).

Such information is also extremely important in defining the food preferences of the Romanians established in this Italian area because many specialities that are effectively regional are indicated by the respondents as Romanian traditional foods (e.g. Radauti soup, which is specific to Moldavia or Bucovina, or creamy chicken stew, a highly appreciated food in Transylvania).

As age, it is situated between 35-55 years. Frequently, family nucleus comprises an adult/adults and one child/children (95 answers), then two adults (42) and one single person (16). Couples are made of Romanians only or are of a mixed nature, with one citizen of other ethnicity, and the children are born in Italy most of the times. The single individuals (over the ages of 50) present a special and very interesting case for our research, as they are mainly part of the professional category of people who take care of elderly Italians and, by the nature of their work, develop their activities inside the Italian houses. Subsequently, they are under a strong Italian influence, and their answers are very close to those which come from mixed families.

In the process of integration in the new social reality of the adoptive country, a complex process is triggered, which is being expressed through language assimilation, norms of conduct, social rules, clothing and behavioural rules. We observe a slow process, not without psychological and affective consequences, but necessary from the desire not to be rejected and, instead feel accepted by the majority population. Frequently, in the process of naturalization, food habits are mostly resistant to changes as they are practiced in domestic spaces, far from the critical eye of the majority community members (Kittler et al., 2012). This concept has already been formulated by the sociologist Pierre Bourdieu who used to sustain that nourishment represents one of the most profound connections with the social-belonging group, being part of our most profound interiority that he called *habitus* (Boudieu, 1972). The conclusion that immigrants maintain the traditional food and culinary habits unchanged in time may be erroneously drawn. However, studies performed on immigrant groups of second generation demonstrated a new reality: children raised in Italy would rather eat Italian food every day, the same as the food consumed by their Italian peers or which they receive at the canteen of their kindergarten or school. Traditional food will have a marginal space, as it is consumed only during holidays and special events, strictly inside the family or the ethnic group of provenance (Tatarella, 2010; Di Renzo, 2014).

At the question 'how often do you cook Romanian food?' the interviewees answered as follows: daily: 15%, more times a week: 35.9%, once a week: 12.4%, once a month: 2.6%, occasionally 25.5% very rarely (6.5%), and never 1.3%. These results, corroborated with the question about the presence of a person of another ethnicity in the family nucleus (40.3% live together with at least one person of another ethnicity, usually Italian), with various culinary habits), lead to the following interpretations: the people who cook Romanian specialities on rare occasions generally live together with people of another ethnicity and have been established in Italy for many years. From the investigation in the field, which provides more details to the answers in the questionnaires, we found that the people employed by Italian families to provide care to the elderly or to people with health problems, strictly cook what the employers indicate them, that is Italian food, and almost never Romanian food. Italian culinary habits are also adopted on an accelerated basis in mixed families, where the Romanian food has a peripheral place. At the opposite poles are the families exclusively comprising members of Romanian origin, with or without children, who cook Romanian specialities on a daily basis or several times a week. Nevertheless, their food habits have encountered radical changes and we shall observe this aspect comprehensively in the other

questions of the questionnaire, as ‘the tastes are being learnt, determined by the culture of belongingness, as well as by the historical and social context, and not as objective, natural, universal, unchangeable data: they are generated from the capacity of any new member of the community to imitate, reproduce and acquire the gestures they see, the emotional expressions and reactions they notice’ (Carrara, 2013).

The ingredients necessary for the preparation of traditional specialities (sauerkraut for cabbage rolls, bottled or lyophilised borsch, dry dill) or Romanian culinary products (white cheese, sour cream, boxed fish-egg salad, white cheese, smoked pork hock, cold meats) are procured by 63.2% of the respondents from food stores with Romanian products, which become real aggregation points for them to preserve their own traditions and culinary identity (Castellani, 2007). The so-called nostalgic-value products are acquired from here, reminding of the period spent ‘at home’: *cozonac* (Christmas sweet bread), corn snack *Pufuleti*, fruit-flavoured *pufarins*, home-made chocolate, pate, *parizer* sausage, roasted sunflower seeds.

When there were no such stores, similar products could be acquired from stores specialized in Eastern-European ethnic products (Russian, Ukrainian) or original recipes were adapted by using Italian ingredients. Another source of acquiring Romanian ingredients, as indicated by 28.3% of the people interviewed, are families and friends in the country of origin. Another reality is set forth here, tightly connected to the history of immigration and preservation of connections with the people in the home country: we are talking about the famous buses and minibuses used for international transportation of persons and packages. A small percentage (7.2%) consists of those who declare that they do not acquire Romanian ingredients and products, a result which leads us to the answer to a previous question, where the respondents declare to cook Romanian food very rarely or never.

A surprising result is the one regarding the preparation of home-canned vegetables and fruits for winter: in a social and economic system in which one can acquire anything, at any time, 38.4% of those who were interviewed still answered affirmatively. Alberto Capatti and Massimo Montanari, two experts in gastronomy, have dealt with the importance of canned food in the publication ‘*La cucina Italiana, storia di una cultura*’. According to them, there has been a move in time, from the space of primary needs, which were characteristic to a surviving culinary system, when canned food was put in the cellar for the sake of fighting starvation during market crisis or unfavourable meteorological conditions, towards the area of home-made delicacies for the purpose of satisfying the most refined tastes. In this way, we may strongly assert that Romanians in Parma prepare certain canned foods according to ‘home’ recipes, either by habit (‘we used to do it every autumn’) or in the research of an authentic taste for which they haven’t found an equivalent in local cuisine. Among them, we recall the vegetable spread - *zacusca* (eggplant and red pepper spread with or without mushrooms), pickles, sauerkraut, pickled red pepper and red chilli peppers, sweet red peppers stuffed with cabbage. The real problem stems from weather conditions (moisture, average higher temperatures) which do not allow their preservation for a longer period of time (e.g., because of high temperatures, cabbage is pickled faster and preserved in less time).

Religious holidays (Easter and Christmas in particular) are preceded by periods of Lent and Advent, in which the Orthodox Christians (the main religion in Romania) follow a vegan diet with few exceptions: the days when they can eat fish. From those who were interviewed, 45.8% declared to be fasting only when they can do it, mainly before the most important holidays, and 18.3% mentioned to fast in a strict manner, basically during the entire period of restrictions, with no deviations from the foods allowed, while 35.9% declared not to fast at all. The Church plays an important role in ensuring the obedience of religious precepts, contributing to the preservation of faith and, many times, acting like a gathering means for the Romanian community.

As holiday meals (religious holidays, important family events), 72.8% of those who were interviewed prefer to eat Romanian food, and 27.2% Italian food. It has to be mentioned that

Italian culinary specialities are making their way, little by little, among the preferences of Romanians, as they are adopting both local traditions from the region of Parma (*anolini* pasta soup, *spongata* desert) and Italian national ones (salmon, *panettone*, *pandoro*). Therefore, on the tables of Romanians in Italy, whether we talk about mixed couples or not, *sarmale* (cabbage rolls) and Russian salad never lack, together with *cottecchino* or *zampone*, and for Easter, Romanian *cozonac* sweet bread and chocolate eggs, together with *colomba*.

The questionnaire has also included open questions, among which those which were aimed to describe a usual breakfast, lunch and dinner. It is important to highlight, as far as breakfast is concerned, that an important part of those who were interviewed adopted the Italian style, consisting of a coffee or cappuccino and sweet pastry, very few of them maintaining a salty breakfast, specific to Romanian cuisine.

For the usual lunch meal, many Italian specialities have also been introduced, among which pasta, which is most frequently mentioned. Generally, a complete Romanian menu is frequently identified with a normal Sunday in the family or with a holiday. Italian specialities are making their way little by little into the Romanians' habits also because, compared to the Romanian ones, they need less time to be prepared, the ingredients are at hand and many times they cost less, being part of the daily food basket of the majority population.

The element of strength in Romanian cuisine, mentioned on a frequent basis, is *ciorba* (sour soup), in all its variants. Raw, cooked in the oven, roasted or steam-cooked veggies are indicated as garnish for the second meal. This practice represents a contamination with the local Mediterranean cuisine, where the accent is put on a healthy nourishment and vegetable use. In many answers, we find the Romanized Italian term 'verdură' (vegetables). One of the respondents considered important to mention the place where they have lunch (at home or at the workplace), which triggers limited possibilities of choice. Dinner, consumed at home, at the end of a day of work, mainly consists of cheese and tomatoes, salads, roast and garnish, cheese and polenta, in general light Romanian specialities.

Starting from Massimo Montanari's assertion according to which, by consumption, the representative meals of emigrants' food culture stimulates the so-called cultural memory and contributes to transmitting this culture to future generations (Montanari, 2010), we asked our respondents to indicate three meals which they find representative for Romanian cuisine. We received 124 answers which indicated *sarmale* (meat rolls stuffed in grape leaves or cabbage rolls), 98 mentioning sour soup (25 tripe soup and 11 meatball soup), to which we add 12 indicating the borsch (a variant of sourer soup), 8 indicating soups, 21 roasted pork and beef *tochitura*, 16 stews (together with the diminutive variant 'tocănițe'), 13 aspic, 8 meat roast, 8 Russian salad, 4 eggplant salad, 6 stuffed peppers. Polenta is very popular (29 answers) and can be served with a portion of *sarmale* cabbage rolls, roasted pork and beef *tochitura*, or cheese and sour cream. With reference to dessert, the Christmas *cozonac* (sweet bread) is mentioned in 14 answers, *papanasi* (cheese doughnuts with sour cream and jam) in 8, and pies in 7.

It is interesting to see that some of the respondents indicated their local meals, from their own region of provenance, as Romanian national specialities: Transylvanian cheese polenta, goulash, Radauti soup, chicken paprikas.

In the last section of the questionnaire, the respondents were invited to describe the menu they would prepare for a foreign guest. The answers were different from the ones above, as a selection of proposals was evident and varied depending on their experience and the foreigners' tastes. Besides *sarmale* cabbage rolls, which this time have also gathered the consensus of the majority (91 answers), cold-meats-and-cheese-based starters came forth. Sour soups (44), soups (9) and borsch (4) remain among the preferences, but the number of enthusiasts of roasted pork and beef *tochitura* (only 5), stews (6) and aspic (5) decreases. Meat roast with various garnishes is indicated by 15 respondents; moreover, salads have an important place, with 27 suggestions, both starter-types and those which are served as garnish

(Russian salad 12, eggplant salad 7, roasted peppers salad, fish-egg salad, raw-veggies salad, mashed beans salad, pickles salad). Smoked-meat products are perceived as a Romanian traditional product and appear in 12 answers. As garnish, polenta is indicated 20 times, and fries, variously prepared, 15 times. For dessert, *cozonac* (Christmas sweet bread -7) and *papanashi* (cheese doughnuts - 7) are confirmed, but tarts, cakes, light marbled pound cake or *gombofi* (plum dumplings) also appear. A greater variety of meals and a better care can be noticed in the detailed description of every proposal.

Conclusions

Romanians established in the region of Parma, Italy, are still maintaining Romanian traditions, this aspect being manifested in a culinary manner, especially when they offer traditional specialities on holiday meals or special occasions to their guests. They represent a precious means of promoting Romanian values outside the country borders, and from an economic perspective they are important receivers and consumers of food products made in Romania. Nevertheless, they are unconsciously facing a slow transformation process, thus assimilating behaviours and habits which are specific to Italian culture and to the region where they were born. This phenomenon can be observed in the preferences they have in choosing the foodstuffs for the main meals of the day, especially for breakfast and lunch, where many of them adopt the Italian style, confirming the theory that the 'culinary identity, just like any other one, is not registered in the gene of a people or in the archaic history of their origins, but it is established along the history, in the daily interaction between people, experience, and different cultures' (Montanari, 2010).

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LITERATURE REVIEW ON THE NONFINANCIAL REPORTING OF THE STATE-OWNED ENTERPRISES

Mădălina Dumitru¹ and Valentin-Florentin Dumitru²

^{1) 2)} The Bucharest University of Economic Studies, Romania

E-mail: madalina.dumitru@cig.ase.ro; E-mail: valentin.dumitru@cig.ase.ro

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Abstract

Two pillars of reporting are represented by the governance and the nonfinancial aspects. As these are more recently provided as compared with the financial reporting, our research objective is to conduct a literature review in the area of the nonfinancial reporting of the state-owned enterprises. In this respect, we examine the papers dedicated to the nonfinancial reporting of the state-owned enterprises. Our findings show that the quantity of literature dedicated to state-owned enterprises is lower than the one dedicated to private entities. The usual research methods specific to nonfinancial reporting are employed. While many articles analyse the variables determining the nonfinancial reporting, there is a need for studies dedicated to the barriers of nonfinancial reporting and nonfinancial reporting in practice.

Keywords

CSR reporting, corporate governance, state-owned enterprises, literature review.

JEL Classification

M14

Introduction

Nonfinancial reporting (NFR) includes environmental, social and governance reporting. Concerns about sustainability have become a constant in our lives over the past decades. As such, entities are increasingly reporting on these issues.

Most of the research conducted in the area of NFR is centred on private entities (Ball et al, 2014). Our research is dedicated to a special type of entities, which is represented by the state-owned companies (SOEs). SOEs are entities which are expected to provide public services. They are established in order to correct market failures and create jobs (OECD, 2011). As such, their activity has an important social component. In the same time, some of the services provided (such as the public transport) have a considerable environmental impact. Also, they are connected with the government and the government is expected to implement diverse tools to support the progress in the CSR direction. It was established that SOEs contribute with 10% at the world GDP (Bruton et al., 2015), employ over 6 million

people, obtain operating revenues representing 19% of the international trade and sales representing 6% of the world's gross national income (Florio et al., 2018). They use large volumes of resources (Garde-Sanchez et al., 2017a). They can be used by governments to implement policies and thus are providing an example to other companies and to the society (Garde-Sanchez et al., 2018). For all these reasons, we consider that the SOEs represent an interesting research setting.

SOEs are also called hybrid organizations, because they are owned by the government (depending on it like the public sector entities), are politically governed, but act on the market like the private entities (sometimes, being for-profit organizations). Given the interesting characteristics of these entities and their reason for being, our research objective is to conduct a literature review in the area of NFR of the SOEs.

Our paper is structured as it follows: first, we present a literature review dedicated to the NFR. Our research method follows. We present the results of our study afterwards. Our paper end with the conclusions of the authors.

Literature review

Entities initially adopted a voluntary approach in the NFR. As the number of reports increased, guides were needed. The first stage was the Triple Bottom Line (Elkington, 1994). The concept means extending the traditional reporting framework to take into account social and environmental performance, in addition to financial performance. In the second stage of the development of corporate social responsibility reporting, some independent organizations which launched theoretical reporting frameworks appeared. The most important body created in this regard is the Global Reporting Initiative (GRI). The frameworks launched by GRI have reached the fourth generation and are now the most widely used worldwide in the field of sustainability reporting. In 2010, the International Integrated Reporting Council (IIRC) was created, who's declared purpose was to issue a theoretical framework applicable by all entities in the world that want to develop an integrated report. Integrated thinking and reporting can help the sector make the most of resources, encourage the right behaviors, and demonstrate to stakeholders how the strategy is implemented and value in the short, medium and long term is created. The focus on creating value beyond profit is more flexible and has benefits for SOEs. Integrated reporting can contribute to strengthening governance, transparency and accountability through more comprehensive presentations, focusing on performance-oriented management and explaining how sustainable outcomes will be achieved for a range of stakeholders over time. In the third stage, the authorities began to recognize the importance of NFR for stakeholders and issued regulations. There are countries (such as those included in the European Union) where certain aspects of this form of reporting became mandatory. In response to the great financial scandals of the early 21st century, in 2002 the Sarbanes Oxley Act instituted in the U.S. a set of strict laws for governance. At the same time, the Combined Code has introduced a set of good governance practices in the UK. One of the six OECD principles of governance relates to reporting and transparency. According to it, the corporate governance framework should ensure the timely and correct disclosure of all material aspects related to the entity, including the financial position, performance, ownership and governance of the company. Therefore, the annual financial statements must be prepared in a timely manner and include all the elements of interest to the shareholders. The first aspect related to the NFR that was regulated at the European Union level was the one regarding governance. Thus, the EC Directive 2006/46 required that all listed companies in Europe include a corporate governance statement in their annual report. Most Member States have integrated this into their national legislation by 2010. In 2013, the European Commission identified two major issues related to NFR across the Union: (1) insufficient transparency of nonfinancial information in the business environment and (2) insufficient diversity boards of

companies, which is considered primarily a matter of corporate governance processes. As a result, the European Directive 2014/95 / EU was issued and became mandatory for large companies in 2017.

For SOEs, better information can help improve governance, show how money is spent and rebuild confidence in a post-crisis global economy where capital raising and promoting sustainable growth are essential (World Bank, 2018). A higher level of transparency vis-à-vis stakeholders may result in the discharge of responsibility. This implication can act as a strong motivation and an incentive, especially for organizations with a wide range of stakeholders (Oprisor, 2017). Worldwide, leaders of SOEs are looking for tools and theoretical frameworks to help them demonstrate effective resource allocation and accountability – communicating not only for the sake of transparency, but also to ensure that all stakeholders understand how their organization works.

Research method

Our research objective is to conduct a literature review in the area of the NFR of the SOEs. We chose to study SOEs as there are fewer works dedicated to SOEs than private companies. In this respect, we examined the papers dedicated to the NFR of the SOEs. We searched for them on Google Scholar. The keywords used were “nonfinancial reporting” and “state-owned enterprises.” We read the title and the abstracts and retained the articles considered as suitable for the purpose of this study. Our sample includes 69 articles. The articles were read and the main ideas showing the characteristics of the NFR in SOEs were kept.

Results and discussion

Reporting of entities in the public domain, including SOEs, was developed in parallel with the reporting of companies with private capital, according to the requirements of the stakeholders (Garde-Sánchez, Rodríguez-Bolívar, & López-Hernández, 2017a). NFR is important in SOEs, as it was found that it improves performance, efficiency and confidence of the stakeholders (Royo et al., 2017).

The articles are concentrated in certain geographical areas: China (Cheng et al., 2017; Wang & Zhang, 2019), Italy (Allini, Manes Rossi, & Hussainey, 2016), Spain (Andrades, Martínez, Larrán, & Herrera, 2019; Córdoba-Pachón, Garde-Sánchez, & Rodríguez-Bolívar, 2014; Garde-Sánchez et al., 2017a). There are some parts of the world (for instance, the less developed countries), which are under-researched. Yet, we consider that from the point of view of the nonfinancial aspects, especially these areas are interesting (as they include the environmental aspects, in relation to which these countries do not have a tradition, social aspects, in relation to which there are numerous abuses reported, risks, which are different as compared with the developed countries, or corruption, which has a higher incidence in these areas).

Many studies refer to listed companies (e.g. Allini et al., 2016; Wang & Zhang, 2019). There are studies focused on SOEs controlled by the local authorities (Córdoba-Pachón et al., 2014) or state authorities (Royo, Yetano, & García-Lacalle, 2019). There are studies dedicated to specific domains, such as utilities (Adams & McNicholas, 2007; Cormier & Gordon, 2001), or to environmentally-sensitive entities (Cheng, Wang, Keung, & Bai, 2017; Hassan & Ibrahim, 2012). Most of the studies are based in one country (for instance, Andrades Peña & Jorge, 2019), but there are exceptions. For instance, Traxler & Greiling (2019) use in their study 83 sustainability reports published according to Global Reporting Initiative guidelines G4 by companies from 28 different countries.

Most of the work is based on empirical studies. Data is generally obtained from annual reports, websites or questionnaires. There are studies based on one company (for instance,

Farneti, Casonato, Montecalvo, & de Villiers, 2019) to studies with samples made up of more than one hundred companies (Garde-Sánchez et al., 2017a).

As a theoretical basis, all the theories generally used in studies dedicated to CSR reporting are employed: stakeholder theory (Andrades Peña & Jorge, 2019; Garde-Sánchez et al., 2017a; Garde-Sánchez, Rodríguez-Bolívar, & López-Hernández, 2017b), legitimacy (Andrades Peña & Jorge, 2019; Cormier & Gordon, 2001; Garde-Sánchez et al., 2017a, 2017b), and to a lesser extent agency theory (Allini et al., 2016) and institutional theory (Montecalvo, Farneti, & de Villiers, 2018). Although the theories are described, in many articles they are no longer used to interpret the results. The legitimacy theory is a very good premise to explain why SOEs – especially non-listed ones that provide services of public interest – are motivated to report integrated on governance, social and environmental issues. The legitimacy theory is very important in this context, because an entity must justify its existence at a social level, especially if it offers public services. Motivation of legitimacy is also important, but in Romania unlisted state-owned companies are also unprofitable, so the hypothesis issued here is not verified. Some SOEs are too big to fail, which causes them to report nothing, because they do not have to be justified in front of the public. Both stakeholder and legitimacy perspectives are very useful in explaining the motivations for integrated reporting for SOEs, especially for social and environmental issues. The agency theory is very good for integrated reporting on governance issues and for strategic decisions, like internationalization.

The purpose of reporting is to improve the legitimacy of the company (O'Dwyer, 2002), to control the perception and priorities in terms of environmental performance (Larinaga-Gonzalez et al., 2001), to provide on account in front of the stakeholders (Adams and McNicholas, 2007). Some articles address only certain aspects reported. For example, Allini et al. (2016) dedicated their study to risk reporting, Farneti et al. (2019) to social issues etc.

One of the main aspects studied regarding the reporting of SOEs are the factors that determine the reporting of companies with state capital in accordance with the legal requirements. Corporate governance is seen as a determinant of the NFR. A set of variables chosen for the studies is presented in table no. 1.

Other studies are dedicated to the inhibitors of the NFR in SOEs. Among them, the accountability style, the ambiguity of the laws and the lack of sanctions are found (Andrades Peña & Jorge, 2019).

Many articles analysed show differences between the NFR of private entities and SOEs (Adams & McNicholas, 2007; Muttakin & Subramaniam, 2015). There is evidence that the quantity of NFR disclosed by SOEs is lower than the one disclosed by private entities (Andrades et al., 2019; Andrades Peña & Jorge, 2019). A reason is the lack of awareness of the responsibility. There is a need to actively integrate the CSR actions in the daily activities, to adopt a proactive CSR vision, dynamic and aware of the stakeholders (Córdoba-Pachón et al., 2014).

Most of the articles from Spain (Andrades et al., 2019; Andrades Peña & Jorge, 2019; Royo et al., 2019) show that the quantity of NFR is reduced. There are items which are not presented at all, such as the politics, objectives and corporate governance structures. The investors are still considered the most important stakeholders.

Another interesting finding is that the general aspects are more frequently disclosed than the aspects specific to the domain (Traxler & Greiling, 2019). There are significant differences from one company to another (Wang & Zhang, 2019).

Table no. 1 Variables used in the studies

Studies	Variables related with	Examples of variables	Variables with significant influence
Allini et al., 2016; Esa & Ghazali, 2012; Lewis et al., 2013; Muttakin & Subramaniam, 2015; Robertson and Barling 2013; Wang & Zhang, 2019	The board of directors	Size, frequency of the meetings, independent members, diversity, age	Diversity and age of the members of the board are correlated with the risk disclosure. The size and independence of the board are associated with the CSR disclosure.
Allini et al., 2016; Andrades Peña & Jorge, 2019; Cormier & Gordon, 2001; Cormier et al., 2005; Esa & Ghazali, 2012; Hossain and Reaz, 2007; Kansal et al., 2014; Muttakin & Subramaniam, 2015; Traxler & Greiling, 2019; Wang & Zhang, 2019; Webb, 2004	The entity	The size of the institution, the environmental sensitivity, profitability, leverage, government ownership, type of public capital (state or local), visibility on the internet, stakeholders' pressure stock exchange listing	The size, age, type of capital, stock exchange listing, stakeholders' pressure, domain, profitability and visibility are correlated with the NFR disclosure.
Garde-Sánchez et al., 2017a	The managers	Age, sex, the profile of the CSR education, responsibilities related with the CSR	Responsibilities related with the CSR influence the online disclosure of the CSR information.

Source: authors' compilation

The relevance of the environmental disclosure is questioned. While the quantity of the disclosure increases, Cheng et al. (2017) show that negative information regarding the environment was hidden by their sample companies. The social reporting is preferred.

The researchers noticed that the amount of information disclosed by SOEs varies in line with the size of the entity and the nature of public ownership (Andrades et al., 2019).

A central theme discussed in the articles is the accountability of the SOEs. It is generated by the combination between public and private characteristics of these entities. "Who is accountable for whom" and "for what" is to be answered (Grossi & Thomasson, 2015). One question refers to the accountability style (Royo et al., 2019): is it characteristic to the public or private sector? Accountability is important for shareholders taxpayers and other stakeholders who are the recipients of the services provided by SOEs (Ferguson et al., 2012).

Conclusions

Some authors (e.g. Garcia Sanchez, Andrades Pena) published several articles dedicated to this topic, which shows that this is their main research interest.

Many articles are published very recently (for example, in 2019), which demonstrates an increase in researchers' interest in this topic.

Correlations are made that have contradictory results from one sample to another. It would be interesting to see what is going on in companies, how decisions are made about what is reported. Other research methods could be used for this (case studies, interviews). In line with Garde Sanchez et al. (2018), we find that there are few articles dedicated to the impact of CSR in practice. Research in this field is significant especially in countries where the state has a strong presence in the companies.

If the State is the only shareholder, then the public remains as the only interested party in the NFR of companies. In Romania, it is wrongly assumed that the public is not interested in this reporting, and therefore NFR is not offered by the respective entities. It can be argued that the NFR is justified by the existence of the public responsibility of the respective entities, if their role is not an exclusive one to make a profit, but to correct the market deficiencies.

As a future research topic we consider that it is interesting to see what is the difference, theoretically, between listed and unlisted companies, in terms of their nonfinancial (integrated) reporting. For example, to what extent NFR can help a company such as Metrorex, CFR, or Posta Romana, which have significant social or environmental problems. Which are the motivations for unlisted companies to report nonfinancial aspects? Does reporting differ depending on this idea: to what extent does the entity offer public services versus profit seeking?

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THE RELATIONSHIP BETWEEN GENDER EQUALITY, WOMEN EMPOWERMENT AND SUSTAINABLE DEVELOPMENT

Hend Hassan¹

¹ The Bucharest University of Economic Studies – Bucharest, Romania

E-mail: hend.elsaid@gmail.com

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Abstract

This Paper has two aims: (i) to establish the relationship between gender equality, women empowerment and development and (ii) to reveal the gender disparity women struggle with regards to poverty, health, education, economic activity, labor participation as well as political involvement. The theoretical rational rests on the assumption that gender equality and women empowerment are integral to sustainable development as stipulated by the United Nations Millennium Goals and acknowledged by the international community. Attaining development however, entails breaking the poverty cycle that most developing countries are trapped in. It's important to note here however, that although poverty is a common apprehension in developing countries, women make up for the vast majority of those living in extreme poverty signifying palpable hindrance to achieving development. The paper analyzes the apparent gender disparity pertaining to fundamental human rights denied to women, the matter that further intensify the challenges facing them. The findings of this paper reveal evident inequalities in what is accessible to women in terms of health, education, labor opportunities and political participation. The paper concludes that all the preceding diminishes women empowerment prospects which in turn decelerates development and diminishes any exertions wielded by countries to achieve this goal. These conclusions may aid decision-makers in employing sound public policies that endorse gender equality and henceforth accelerate development.

Keywords

Gender Equality, Women Empowerment, Sustainable Development, Extreme Poverty, Human Development, Gender Disparity

JEL Classification

J16, J18, O10, I32, O15, J16

Introduction

Development is a term that has been demarcated in literature by a variety of definitions. While many researchers tend to recognize development from a purely economic prospective, this

paper however views development from a human, social as well as an economic one. The UNDP -in 1995- has introduced the notion of 'human development' indicating that despite full recognition to the significance and necessity of the economic factor in securing decent standard of living to societies and supporting the reduction and -ultimately- the eradication of poverty, the concept of development still needs to exceed the materialistic perspective (Dorlet, 2005).

Women empowerment and endorsing gender equality have been recognized as one of the eight essential Millennium Development Goals (MDGs). Furthermore, towards the end of the twentieth century all notions pertaining to development where women are involved have been merged into what is now known as gender and development (GAD) approach (Dorlet, 2005), thus giving full recognition to the role of women in achieving development.

This paper aims to portray the inevitable relationship between gender equality, women empowerment and development. The paper also aims to shed light on the evident disparity women suffer from in accessing basic human and civil needs and the impact of this deprivation on the achievement of the desired developmental goals. To attain the stated objectives the paper commences with a review of the literature illustrating the intertwined relationship between improving gender equality, endorsing women empowerment and accelerating development. In this respect academic literature done by prominent researchers in the field as well as reports released by international organizations have been investigated to depict the undisputable fact that development hinges on the capacity to endorse gender equality and women empowerment.

The paper, thereafter, proceeds to show how the unmistakable gender disparity poses apparent detriment to women, the matter that diminish not only their chances in escaping the poverty cycle but extends the same privation to their children as well. This is displayed through presenting the inequality and injustice women suffer with respect to poverty, health, education, labor participation and political involvement.

The paper concludes that macro-economic policies, especially in developing countries, are still male biased and that policy makers in these countries need to adopt gender sensitive strategies in order to empower women to bring them up to their potential productivity, and therefore, instate sustainable development.

The Relationship between Gender Equality, Women Empowerment and Development: An Overview

Gender equality – which is the state of equal rights, responsibilities and opportunities extended to both men and women - is a matter of utmost importance, especially because of how it intertwines with attaining Sustainable Development Goals. It is essential to realize that by continuing to undermine women and denying them essential tools for increasing their productivity we are forgoing potential workforce that can add to human capital, therefore, diminishing economic growth and hence development. Empowering women and incorporating them as vital members and partakers in all realms is not a luxury anymore but rather a necessity. Regrettably, gender inequality remains to be a fundamental barrier hindering the accomplishment of this goal.

Subsequent to its importance, an immense body of literature is devoted to topics pertaining to gender equality, particularly in developing countries. The Convention on the Elimination of Discrimination against Women in 1979 stipulated that, “the full and complete development of a country, the welfare of the world and the cause of peace require the maximum participation of women on equal terms with men in all fields.” However, the importance of gender equality in attaining women empowerment -and hence development- can only be explained in a socio-cultural as well as political and economic context. Gender injustice practiced in a given society becomes the status quo or 'natural' as Kabeer label it. Kabeer in 2001 expands on this point – previously stated by Bourdieu in 1977 as the theory of 'doxa',

claiming that traditions, norms, and culture are often taken for granted to the extent of becoming ‘naturalized’. Consequently, women tend to adopt and cope with their inferior status and start perceiving themselves as subordinate individuals of lesser worth. Subsequently, they lose sight of their human as well as civil rights leading them to making ‘choices’ that further assert their subsidiary standing in the society (Malhotra and Schuler, 2005).

The ‘feminist empowerment’ model places extensive importance on gender equality and considers gender subservience to be an intricate, multifaceted, deeply rooted problem that adversely impacts all aspects of a woman’s existence. The model is, therefore, founded on the premise of equity, equality and empowerment (Dorlet, 2005). Following the same perspective, Mayoux -in 2002- accentuates the importance of identifying empowerment in relation to a ‘gender and development’ approach (Dorlet, 2005). As such gender equality is deemed essential for attaining women empowerment which is acknowledged as a fundamental prerequisite in the development process.

It is, therefore, essential for women to be regarded and addressed as equal citizens with all consequent rights and responsibilities. Meaning that, both men and women should enjoy equal rights with regards to health, education, nutrition, access to economic resources, political participation, and safety from all forms of violence and oppression. Attaining of gender equality entails improvements in all these aspects, ending all types of discrimination against women and securing their access to all the mentioned essential human and civil rights (Action Aid UK and Christian Aid, 2015).

Gender disparity is the predisposition where the sex of a person postulates different rights and opportunities in life for women as opposed to men. The connection between gender disparity and development can be described using different levels of associations of gender disparity in poverty, in health, in education, in economic activity and labor participation, and in political participation. The following section of the paper addresses the degree of inequality pertaining to the mentioned associations.

The structure of the paper should be clear, and well organized. Titles and subtitles should be placed in logical sequence. Please make use of accepted terminology in your field, provide a detailed description of methodology, clearly state your results and discuss the implications of your findings.

Gender Disparity and Poverty

The World Bank defines “extreme poverty” quantitatively as living on less than \$1.90 per person per day (2016). This is while the USAID defines extreme poverty as “the inability to meet basic consumption needs on a sustainable basis. People who live in extreme poverty lack both income and assets and typically suffer from interrelated chronic deprivations, including hunger and malnutrition, poor health, limited education, and marginalization or exclusion” (2015).

Poverty reduction entails the exertions of those involved to evade the poverty cycle, the matter that dictates developing their skills in order to increase their productivity and involvement in their societies, hence uplifting their potential in having a better life (Dorlet, 2005).

Social discrimination against women as well as unequal access to economic resources puts women in distress, that’s to say while both men and women suffer from the adversities of poverty evidence shows that women tend to be increasingly jeopardized by it. Consequently, it is alleged that women presently make up for two thirds of the 1.4 billion people living in extreme poverty and accounting for 60% of the 572 million poor workers in the world (Action Aid UK and Christian Aid, 2015). This is as their socio-economic vulnerability makes them more apt to be victims of economic hardships of inflation, unemployment and unequal income distribution. Not to mention that they are the ones who struggle the most in conflict zones and humanitarian crises.

The Gender Development Index (GDI) is the index showing the ratio of female to male HDI (Human Development Index) and it categorizes countries into five groups based on the degree of absolute divergence from gender equality in HDI. Group 1 encompasses countries with the highest gender equality in HDI accomplishments while Group 5 comprises countries with the lowest gender equality with regards to HDI achievements. Statistics prove that the more the deviation from gender equality the highest the manifestation of poverty -as measured by the national per capita income- in general and among women in particular. A report by the UNDP shows that countries in Group 5 exhibit evidently lower per capita income (measured in 2011 PPP \$) than those in Group 1 or 2. To exemplify, Afghanistan in Group 5 with a GDI of 0.723 has registered per capita income of 1,102 for women in 2018. This is while El Salvador in Group 2 with a GDI of 0.969 has registered 5,234 per capita income for women during the same year (2019). Also, worthy of noting is the noticeable variance between women per capita and that of men in countries with low GDI. In Namibia – Group 1 with GDI value 1.009- shows a per capita income of 8,917 for women and 10,497 for men, displaying a reasonable variance between both. This is while during the same year, in Yemen - Group 5 with GDI value 0.458 – women have registered 168 per capita income in 2018 compared to men who have registered 2,679 for the same year (UNDP, 2019). This proves that although poverty is a common struggle in developing countries, women bear the biggest burden of it. The fact that women are more subject to extreme poverty is explained by the hardship acquired from unpaid and low paid work, the fewer assets and resources they possess the gender-based violence they are subject to and the high possibility of being coerced in early marriage without reaching a proper education level. All the previous aspects deter women from being able to reach their full productive potential and adequately participating in their countries' economy, the matter that keeps them trapped in a cycle of extreme poverty. It is worth noting here that although gender disparity is evident in almost every part of the world it is definitely more acute in developing countries, evidence shows that more developed societies struggle less with gender inequalities. The criteria used for reaching this conclusion include reproductive health, educational level, economic wellbeing and political participation, (USAID, 2015).

Data from different countries proof that women make better decisions -when managing the little income under their control- in attending to matters pertaining to childcare, enhancing family nutrition, provision of healthcare as well as spending on education. In Kenya, a study in 2014 study has established absence of a woman in the household caused financial instability in the family, loss of crops and agricultural productivity (USAID, 2015). Research also indicates that increasing women participation in the labor force leads to rapid economic growth and therefore granting countries a better opportunity in escaping the poverty cycle (USAID 2015). It is –therefore- unrealistic to eradicate extreme poverty –one of the main goals of development- without addressing gender equality.

Gender Disparity in Health

Health is a key factor in women wellbeing in specific and in achieving development goals in general, yet health policies rarely take in consideration gender issues. Particularly in developing countries women have diminished to no control over their healthcare provision. This is as they are usually unable to travel alone to access remote health services, not to mention their lack of possession of needed financial resources to pay for the healthcare they need. The situation is further intensified when girls or young women are denied healthcare by public health facilities without parental or spousal approval, which makes private health providers their only resort resulting –therefore- in extra costs that are usually not afforded by many. Cost –however- is not the only matter impacting women health, detrimental norms and traditions in many cultures - such as female genital mutilation and coerced early marriage- also have dire consequences on women's health in developing countries.

Additionally, women suffering extreme poverty usually have limited control over their reproductive health, which is a by-product of lack of proper education again resulting from poverty. Early childbearing, lesser intervals between child births and unplanned pregnancies adversely affect women health and lessen their chances in finishing their education or having a paid job. As such the extreme poverty cycle becomes exceedingly difficult to break since higher fertility means less spending on health and education per child. Higher fertility –on a national level- has also been related to less investment by governments on infrastructure and public services (USAID, 2015), which by all means hinders economic growth and development.

In 2010 a research in Bangladesh illustrated that an infant with a deceased mother has an eight-time higher risk of dying in his first year compared to an infant with a living healthy mother. Also, another research in Kenya –in 2014- found that children with deceased mothers are more likely to drop out of schools as well as suffer from financial volatility (USAID, 2015). Therefore, although preserving the life of a mother is enough of a goal in itself, it's also crucial to consider the shattering impact it has on the well-being of her children, the economic security of her family and the general prosperity of her community. Healthier women are naturally more productive as they are able to seek formal employment and hence add to the wealth of their families and the society in general. This is as well as being more equipped to take care of the health of their families and the education of their kids, therefore more apt to assume their role in supporting the economic growth and development of their societies.

Gender Disparity in Education

In spite of the remarkable increase in the literacy rates through generations, statistics still show a gap between men and women literacy rates. The UNESCO Institute for statistics declared that out of the 750 million adults that are still illiterate two-thirds are women. Notwithstanding the improvement in gender inequality with regards to youth literacy rates, it still persists in one out of five countries – as illustrated by the atlas. Research done in 43 countries, mostly positioned Northern Africa and Western Asia, Southern Asia and sub-Saharan Africa, attests that young women between the age of 15 to 24 years still lag behind men –in the same category of age- with respect to fundamental reading and writing skills (UNESCO, 2018). Research - in 2011- has shown that amid 'low-income countries' only a humble 20% has attained gender equality in the primary stage of education, 10% in the lower secondary, and 8% in the upper secondary. The disparity also increases as the poverty increases; in some of these countries nine out of ten women have been found not have had the opportunity to finish their primary education (USAID, 2015). These concerning figures show how much work still needs to be done in order to fulfill the Sustainable Development Goals pertaining to the right of education to all.

That is to say, even though the enrollment ratios of girls in primary schools, it remains obvious that women still struggle with persistent encounters hindering them from attaining the proper education. Examples of these struggles are extreme poverty, discrimination, gender-based violence, forced early marriages and consequent early pregnancies (Action Aid UK and Christian Aid, 2015). However, worst of all is the perceived worthlessness associated with girls' education. The lack of foreseen future employment opportunities for women makes parents less willing to invest in their girls' education and more willing to divert this investment to their male siblings, especially in households suffering from extreme poverty.

There is a tendency to place women in 'gender stereotyped' learning and training opportunities (Kabeer, 2012). Needless to say, if women are to assume their role in the society in general and the economy in particular efforts need to go beyond primary or basic education. This is as secondary to high education as well as proper training positively correlates with access to job opportunities and participation in the formal labor market. In sub-Saharan Africa

- a region characterized by extreme poverty- men's income average twice as much as women's, yet education has been found to help bridge this gap. Globally, for every year of education women's paid labor remunerations increased by 11% for primary schooling, 9% for secondary schooling and 17% for high education. These figures show a substantial upsurge in developing countries, for example in women with high education earn 95% than women with modest education (USAID, 2015). The returns on women education exceed the simple financial figures, this is as the UNESCO –in its 2014 report on education- has claimed that children with mothers who have completed secondary education have twice as much probability to live past the age of five, thus cutting early childhood mortality by half (USAID, 2015), signifying another milestone along the road of achieving development.

Gender Disparity in Economic Activity and Labor Participation

Despite the extensive arguments advocating women as a vital labor resource in enhancing economic growth and development, women participation in economic activity is still subdued relative to men. Collier specifies four distinctive aspects -hinging on 'social conventions'- that restrain women from properly participating in economic activity. First is the existing discernment that extends beyond the household to the labor market and access to credit and funding. Second is the fact that 'role models' in economic and production activity tend to be highly 'gender-specific'. Meaning that boys tend to follow the example of men preceding them while girls feel inclined to follow in the footsteps of other women. Consequently, when a new economic opportunity emerges if it is assumed by a man it will automatically, thereafter, be readily available to men rather than women. Third is the distribution of responsibilities and compulsions within the household that falls primarily on the shoulders of women that make them reluctant to surge their burden by more labor outside their domicile. And lastly -and foremost demanding- is the duty of reproduction that is the entire responsibility of women with what it entails in terms of time, physical and mental health strain on them (Collier, 1989:8, cited in Miller and Rasavi, 1995).

Palmer builds on the verdicts of Collier and takes the notion of reproduction burden way further as he labels it a 'reproduction tax' on women labor that they have to submit prior to engaging in any other labor activity. In this sense the 'reproduction tax' levied on women not only limits the time at their disposal to participate in economic activity but also confines their choice solely to work opportunities suitable to their household obligations. Evidently, the economic consequent is misallocating a valuable resource exemplified in the forgone opportunity of women productivity, which is a distortion to the market forces leading to extensive economic inefficiency (Palmer, 1991:163 cited in Miller and Rasavi, 1995). Macro-economic policies -thereafter- have been criticized by many researchers for its male bias, Elson calls on policy makers to grant some attention to 'human development aggregates' instead of just "considering the monetary aggregates of productive economy and ignoring the human resource aggregates of the reproductive economy (Elson, 1993, cited in Miller and Rasavi, 1995, P.27).

For instance, in Egypt, the IMF stipulates that if the female contribution in the labor force is elevated to the same level of the male participation rate in addition to granting them proper access to employment opportunities, this would result into an increase of up to 34% in the GDP of the country (USAID, 2017). Regrettably, however, women participation in economic activity in Egypt hovers around 23% -compared to 79.1% for men- which is almost half as much as the world's average for women participation in economic activity registering 53% (ILO, 2018).

Gender Disparity in Political Participation

Globally, women participation in political life – as measured by the percentage of women seats in parliaments- has registered a humble 21.9% in 2014 (Action Aid UK and Christian Aid, 2015). The figure indicates the lack of proper inclusion of women in formal as well as informal decision making at all levels, whether at the household, local community, or national government. Obstacles to women's political participation are deep rooted in the culture of most countries. Even in cases where women are represented, the adverse stereotypes and negative sentiments relating to their leadership skills, deters their active involvement in decision making on an equal standing with their male peers.

Moreover, when the previous is coupled with violence against women the situation worsens, it is predicted that 35% of women will face some form of violence either domestically or otherwise, in their lifetime (Action Aid UK and Christian Aid, 2015). Violence – or even the fear of it- in itself is key hurdle in the way of women empowerment. This is as it averts women from attaining other basic human rights, including freedom of choice, education, involvement in social and economic life and ultimately participating in any form of decision making relating to their lives or to others. Political participation is the hope that women acquire a voice capable of influencing the legal framework and hence, addressing their problems. This is as it has been proven beyond doubt that women representation even at the level of local government can initiate different outcomes. For instance, in India data shows that the number of portable water projects were 62% higher in regions with 'women-led' councils compared to those led by men. Also, in Norway there has been a manifested positive correlation between the representation of women in community councils and the improvement of child-care coverage (UN Women, 2019).

Regrettably, a report by UN Women -in 2019- indicates that only 24.3% of parliamentarians world-wide are women as compared to 11.3% in 1995 signifying extremely slow progression. Data also reveals that as of June 2019 only 11 women are holding a Head of State position and only 12 are holding a Head of government position. This is while a more distressing statistics signifies the presence of 27 countries with less than 10% women representation, and 3 countries displaying no women representation at all. Moreover, only 20.7% -in January 2019- were found to be holding ministerial positions and were mostly confined to five portfolios, namely, Social Affairs; Family; Environment; Employment; and Trade. (UN Women, 2019).

Conclusions

Poverty reduction entails the exertions of those involved to evade the poverty cycle, the matter that dictates developing their skills in order to improve their chances, increase their productivity and involvement in their societies, hence uplifting their potential in having a better life (Dorlet, 2005). Securing equal rights to health, education and job opportunities is not only a just cause in itself but also an investment that promotes economic prosperity when the productive capacity of women is utilized up to its potential.

Statistics have proven -time after time- in renowned literature that increasing women participation in the labor force leads to rapid economic growth and therefore granting countries a better opportunity in escaping the poverty cycle. Healthier, better educated women are naturally more productive and more equipped to take care of the health of their families and the education of their kids. And that proper political participation is indispensable for women to acquire a voice capable of inducing the legal framework and hence, tackling their problems. Therefore, gender equality is an essential prerequisite for escaping the poverty cycle the matter that is at the core of achieving development in any society.

Despite all of the mentioned beforehand, macro-economic policies -as attested by numerous prominent researches- remain biased in a way that favors men at the detriment of women. The result of which is a continued lower female productivity -compared to their potential- and

hence diminished development achievements compared to the desired. To alter this situation, policy makers, have to adopt gender sensitive strategies that acknowledge the palpable connection between gender equality, women empowerment and sustainable development.

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TEACHING STAFF AND SCHOOL POPULATION: MAJOR TRENDS IN ROMANIA'S PRE-UNIVERSITY EDUCATION SYSTEM

Monica Logofătu¹, Adrian Cosman², Sorin Tudor³ and Elena Cristina Cernătescu⁴

^{1) 2) 3) 4)} University of Craiova, Romania

E-mail: monicalogofatu15@gmail.com; E-mail: cosmanadrian cv@gmail.com;

E-mail: tudorsorin2007@yahoo.com; E-mail: cernatescuelenacristina7@gmail.com

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Abstract

The functioning of each educational system, at all levels, is based on a qualitative human resource for the coherent implementation of strategies. Teachers represent the essential resources for the effective implementation and realization of educational policies and classroom objectives. The shortage of the HR within the educational system reduces the performances of pupils. In this paper we aim to investigate the evolution of indicators that illustrate the human resources involved in the educational process in Romania, namely teaching staff and school population. Therefore, we conducted an empirical investigation, collecting data on human resources in education that were subject of statistical processing. The conclusions show that the trend of declining school population is more pronounced than the trend of reducing teaching staff, educational expenditures for the pre-university education system have decreased, and the average number of teaching staff per school has increased due to the merging of several schools, especially in rural areas, as a result of the increase in school population.

Keywords

Pre-university education system, teaching staff trend, school population trend, educational expenses.

JEL Classification

O15, I20

Introduction

The development and support of teachers are an important functions of the inspectorates and school organizations, according to the economic and educational reasons. As stated by the OECD “creating a stronger workforce in the education system is not an easy task” (OECD, 2009, p.48). In Romania, education sector challenges with many important problems (Bocean

and Sitnikov, 2015) as a result of underfunding the educational system. Although there has been an increase since 2016, spending on education remains low.

The teachers' payrolls in Romania are among the lowermost in Europe for all categories of teachers. Starting with January 2011, the basic salaries have recorded significant increases, however, still being among the lowest in Europe. A bonus system has been created to encourage teachers to work in rural areas (OECD, 2005, 2012), in order to prevent the depopulation of rural schools and to increase the quality of the educational act at the rural level.

A small number of measures related to teacher training are aimed at improving the recruitment and initial training process (Bocean, 2007; Varzaru and Varzaru, 2009; Stanciu et al., 2010; Barbu and Barbu, 2012; Varzaru and Varzaru, 2016). The recruitment system adopted in 1997 is still in place. The process of employment in primary and secondary education is based on an annual competitive examination - the tenure exam. Anyone who meets the compulsory requirements set out in the teacher status can participate. Those who passed this exam are then assigned according to options using a computer system (OECD, 2009). The difficulty of the tenure exam, as well as the lack of desire of teachers to work in rural areas, is a problem in the recruitment process and provision with capable teachers in rural schools.

The school population is in continuous decline due to low birth rates and the emigration of young people to Western European countries (Eurydice, 2015). There is also a trend of depopulation of the rural environment by concentrating the population in the urban environment (Eurydice, 2004).

In this paper, we intend to investigate the evolution of indicators that illustrate the HR in the Romanian educational system: the evolution of the teaching staff, the evolution of the school population, as well as the evolution of the level of expenses allocated for the pre-university education system. The paper work is systematized into four sections. The second section establishes the methodological framework. The third section presents an analysis of teaching staff and school population trend. The fourth section draw the conclusions.

Research methodology

Starting from the conclusions of the previous research in this area, we elaborated two hypotheses concerning the trends of HR indicators in the Romanian educational system:

H1. The teaching staff has recorded a reduction in recent years, correlated with the school population trend and budgetary restrictions.

H2. The average number of teaching staff on school units increased as a result of the merging of some schools or the liquidation of other schools, being influenced by the school population and the degree of pupils' enrollment.

Based on the results of the hypothesis research we draw some recommendations concerning the HRM at pre-university level in Romania. As research tools we will use descriptive statistics and analyses of correlations among variables to identify their influences, as other authors have done in their research (Enescu et al., 2011; Pîrnu et al., 2018).

Results and discussions

In order to investigate the validity of the hypothesis H1 we collected for the period 2003-2017 at the level of Romania data that characterizes the following indicators: the teaching staff - TS, the school population - SP, the percentage of educational expenses in total budget revenues PEEBV, the percentage of educational expenses allocated reported to GDP – PEEGDP. The last two indicators are used to illustrate budget constraints.

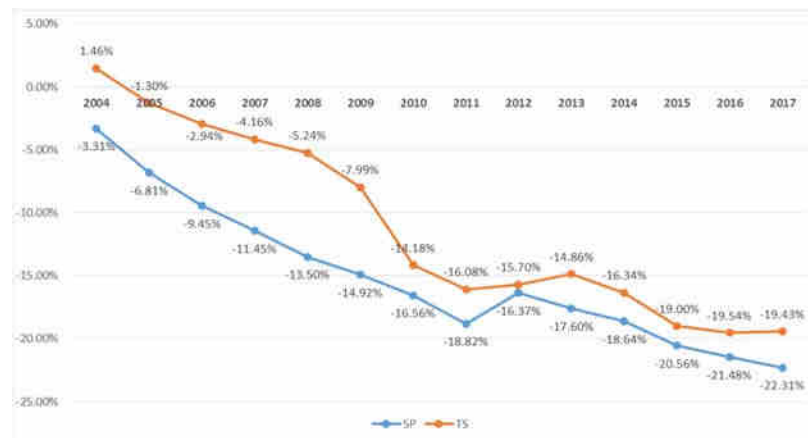
The synthetic situation on teaching staff and school population for the period 2003-2017 in Romania is shown in table 1.

Table no. 1 Evolution of the teaching staff and the school population in Romania

	School population	Teaching staff
2003	3214999	216550
2004	3108634	219716
2005	2996029	213736
2006	2911213	210180
2007	2846904	207537
2008	2781039	205200
2009	2735424	199254
2010	2682489	185854
2011	2610022	181731
2012	2688590	182548
2013	2649040	184372
2014	2615722	181174
2015	2553861	175410
2016	2524399	174244
2017	2497768	174474

Source: Data collected and processed based on INS (2019)

To illustrate these evolutions, fig. no. 1 exposes the percentage changes of these indicators during the period 2004-2017, using as a basis the 2003 values.

**Fig. no. 1. Changes of the teaching staff and the school population (percentages, 2003 - base year)**

Source: Data collected and processed based on INS (2019)

Analyzing the data in table 1 and fig. no. 1, a clear trend of both indicators can be observed within the selected period. Both indicators show a sharp decrease, interrupted in 2012, a more pronounced shrinkage of school population. The school population follows the decreasing demographic trend while also influencing the teaching staff trend. Other factors likely to influence the teaching staff number arise from the economic area of budgetary restrictions.

To detect the correlations among teaching staff and these factors, we have selected two indicators that exemplify the state of the budgetary allocations for education, indicators calculated as rates from the total budget revenues and from the GDP, to counteract the effects of nominal increases in educational expenses: the percentage of educational expenses in total budget revenues and the percentage of educational expenses allocated to pre-university

education reported to GDP. The percentage of educational expenses in total budget revenues (PEEBV) was calculated as a ratio between the total budget revenues for each year and the expenses allocated to education in that year, using data series from the TEMPO online database (National Institute of Statistics). The percentage of educational expenses allocated reported to GDP (PEEGDP) is calculated by reporting the expenses to the total GDP, the data being taken from the Education and training database (Eurostat, 2019). The trends of these two indicators (PEEBV and PEEGDP) is shown in table 2.

Table no. 2 Evolution of indicators from the economic area of budgetary restrictions

	Percentage of educational expenses in total budget revenues	Percentage of educational expenses allocated reported to GDP
2003	15.0	2.02
2004	14.8	1.93
2005	15.6	1.93
2006	19.0	2.02
2007	19.4	1.97
2008	19.1	2.36
2009	17.8	2.30
2010	13.6	2.31
2011	11.4	1.86
2012	11.2	1.56
2013	11.4	1.55
2014	12.4	1.62
2015	12.0	1.71
2016	12.2	1.69
2017	13.0	1.53

Source: Data collected and processed based on INS (2019) and Eurostat (2019)

To detect the influence of school population, PEEBV and PEEGDP on teaching staff number we calculated correlations recorded among the values of these measures in the period 2003-2017 (Table 3).

The analysis of the correlations from table 3 show that TS is strongly correlated with the school population and PEEBV and average correlated with PEEGDP. We observed that pupils' number significantly influences the number of teaching staff, if the rate pupils-teachers remain unchanged.

PEEBV expresses the national policy at the level of education, illustrating the funds that are allocated for education, both for human resources and for what materials. PEEGDP has an average correlation due to the fact that, even during periods of economic crisis, the amount of expenditure allocated to education has an increasing evolution even if the denominator of this rate (GDP) has a decreasing evolution.

Using the data analysis we can conclude that the hypothesis H1 is validated for the period studied (2003-2017). The teaching staff' trend correlates with pupils' trend and the size of the budget allocations, which means that a return of the demographic trend or an increase of the budget allocations will lead to a teaching staff increase.

Table no. 3 Correlations among the evolution of teaching staff, school population, and percentages of educational expenses reported to budget revenues and GDP

		Teaching staff	Number of school units	Percentage of educational expenses in total budget revenues	Percentage of educational expenses allocated reported to GDP
TS	Pearson correlation	1	0.945**	0.726**	0.566*
	Significance		0.000	0.002	0.028
	Values	15	15	15	15
SP	Pearson correlation	0.945**	1	0.505	0.424
	Significance	0.000		0.055	0.115
	Values	15	15	15	15
PEEBV	Pearson correlation	0.726**	0.505	1	0.715**
	Significance	0.002	0.055		0.003
	Values	15	15	15	15
PEEGDP	Pearson correlation	0.566*	0.424	0.715**	1
	Significance	0.028	0.115	0.003	
	Values	15	15	15	15

** . Strong correlation; * . Average correlation

Source: Developed by the author on the basis of data collected from INS (2019) and Eurostat (2019)

In order to investigate the validity of the H2 hypothesis, we collected for the period 2003-2017 following measures: teaching staff - TS, number of school units - NS, the average number of teachers per school unit - ANT, the school population - SP, the degree of enrollment in education - DEP. The values of these variables is shown in Table 4.

Table no. 4 Evolution of the measures concerning teaching staff, school units, school population and degree of education enrollment in education

	Teaching staff	Number of school units	Average number of teachers per school unit	School population	Degree of enrollment in education
2003	216550	10274	21,1	3214999	73,18
2004	219716	8592	25,6	3108634	72,7
2005	213736	7989	26,8	2996029	74,43
2006	210180	6660	31,6	2911213	76,66
2007	207537	6393	32,5	2846904	81,1
2008	205200	6397	32,1	2781039	85,9
2009	199254	6439	30,9	2735424	86,5
2010	185854	5982	31,1	2682489	88,3
2011	181731	5729	31,7	2610022	83,9
2012	182548	5740	31,8	2688590	82,9
2013	184372	5784	31,9	2649040	82,6
2014	181174	5790	31,3	2615722	73,6
2015	175410	5776	30,4	2553861	72,4
2016	174244	5736	30,4	2524399	72,1
2017	174474	5748	30,4	2497768	72,3

Source: Data collected and processed based on INS, 2019

To detect the influence of school population and the degree of enrollment in education on the average number of teachers per school unit, we calculated the correlations recorded among the values of these indicators during the period 2003-2017 (table 5).

Table no. 5 Correlations among the evolution of teaching staff, school population, and degree of enrollment in education

		Average number of teachers per school unit	School population	Degree of enrollment in education
Average number of teachers per school unit	Pearson correlation	1	-0,746**	0,509
	Significance		0,001	0,052
	Values	15	15	15
School population	Pearson correlation	-0,746**	1	-0,151
	Significance	0,001		0,592
	Values	15	15	15
Degree of enrollment in education	Pearson correlation	0,509	-0,151	1
	Significance	0,052	0,592	
	Values	15	15	15
**. Strong correlation				

Source: Developed by the author on the basis of data collected from INS, 2019 and Eurostat, 2019

The analysis of the correlations in table 5 leads to the conclusion that the average number of teachers per school unit strongly correlated with school population, the latter significantly influencing the number of schools that will serve the pupils. The other variable analyzed (degree of enrollment in education) does not register a significant correlation with the average number of teachers per school unit.

Following the results we conclude that the hypothesis H2 is partially validated. The average number of staff per school unit increased as a result of the merging of some schools or the liquidation of other schools, being influenced by school population trend, but not by the degree of enrollment in education.

Conclusions

Inadequate management of staff in the pre-university education system has been identified as the main cause of the unwanted behaviors of teachers and pupils within the public education system (OECD, 2012).

In this paper we set out to investigate a series of HR indicators in the educational system of Romania. In this regard, we formulated two hypotheses that were subject to a validation process, during the research. Following the research, we found that the number of teaching staff correlates with the number of pupils and the size of the budget allocations. On the other hand the average number of teachers per school unit is influenced by direct factors (number of schools or teachers) or indirect but important factors such as central and local decision-makers.

As a result of the decreasing evolution of the school population, the number of teachers decreased, but with a lower rate of decrease, which led to an increase in the average number of teachers per school unit. Such an evolution must be doubled by an increase in teachers'

skills through formalized training programs, which will lead to an improvement in the quality of the educational process. We also recommend the establishment of measures to attract capable teachers to schools in rural areas. Therefore, the Romanian government must increase the share of GDP or annual revenue budget allocated to the pre-university education system, in order to increase the motivation of teachers by ensuring financial rewards aligned at the level of developed European countries.

In Romania, all levels of the education system confront with the problems of teacher shortage especially in rural areas. Educational process in pre-university level is essential for combating the phenomenon of early school leaving, a phenomenon that remains a problem in Romania. A more numerous and qualified human resource in the educational system can lead to better results by the current school population.

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PRE-UNIVERSITY EDUCATION SYSTEM IN THE EU: RELEVANT FEATURES OF ITS TEACHING STAFF

**Adrian Cosman¹, Monica Logofătu², Gabriel Ioan Avrănescu³
and Sorin Tudor⁴**

^{1) 2) 3) 4)} University of Craiova, Romania

E-mail: cosmanadrian cv@gmail.com; E-mail: monicalogofatu15@gmail.com;
E-mail: avramescugabrielioan@gmail.com; E-mail: tudorsorin2007@yahoo.com

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Abstract

The decision makers in European Union are concerned with the education quality and working conditions of teachers. The profile of teachers and the attractiveness of the profession thus reach an important position in the debate on education in Europe, even if these two issues do not show the same challenges everywhere. In other words, the task of national educational authorities is hampered by the unbalanced structure by gender and age that characterizes teachers. This paper aims to investigate the evolution of structure by gender and age of EU teaching staff. Therefore, we conduct a comparative analysis by age segments and by gender at the level of the European Union (28 countries) and the Eurozone (19 countries). The results of the research show an increase in imbalances in terms of age and gender structure, which requires action by education decision makers.

Keywords

Teaching staff, age structure, gender structure, European Union.

JEL Classification

O15, I20

Introduction

Currently, human resources are confronting with a multitude of problems (Bocean, 2007; Stanciu et al., 2010; Varzaru et al., 2012; Bocean and Sitnikov, 2015; Varzaru and Varzaru, 2016) and the field of education is no exception. Not only do teachers feel undervalued, but there are also a number of dissatisfactions with their training as a means of adequately preparing them for the realities of the profession (Eurydice, 2004; Eurydice, 2015).

The share of female teachers in the European education system is the highest at pre-school and primary level (OECD, 2005). On the educational level, most female teachers work in

preschool education. Gender imbalance in the teaching profession is a problem that most education systems face. In general, the relatively low proportion of men is present in all age groups of teachers, slightly more pronounced among the youngest (OECD, 2012).

Regarding the age structure, the number of teachers aged between 18 and 34 in the European Union has decreased significantly in recent decades. This phenomenon is caused primarily by the aging population, but there are other important factors such as: barriers to entry, declining number of jobs, high youth unemployment in the economy (Eurydice, 2018).

Therefore, a comparative in depth analysis by age segments and by gender is compulsory in order to practice a predictive management of human resources in educational system (Puiu, 2017).

In this paper we aim to investigate the relevant features of teaching staff from pre-university education system in the European Union, analyzing the structure by gender and age. The paper is structured into four sections. The first section introduces the research issue. The second section establishes the methodological bases and the research hypotheses. The third section highlights results and discussions. The fourth section concludes.

Research methodology

Starting from the conclusions of the previous researches, we have formulated two hypotheses regarding structure by gender and age of teaching staff from pre-university education system in the European Union.

H1. In most EU countries, teaching staff show a relatively balanced age structure.

H2. In most EU countries, the number of female teaching staff significantly exceeds the number of male teaching staff, education being a predominantly female field.

These hypotheses will be investigated and the resulting conclusions will allow us to draw conclusions. As research tools we will use descriptive and explanatory statistics, which are used in other similar research (Baloi, 2008; Enescu et al., 2011).

Results and discussions

In order to investigate the validity of the H1 hypothesis, we collected both synthetic and analytical data that characterize the indicators at European Union level (28 countries) and the Eurozone (19 countries). The synthetic state is shown in table 1.

Table no. 1 Age structure of teaching staff

	European Union (28 countries)			Eurozone (19 countries)		
	18-34 years	35-49 years	Over 50 years	18-34 years	35-49 years	Over 50 years
2003	23.0%	40.9%	31.5%	27.31%	43.66%	27.98%
2004	22.2%	39.8%	35.2%	27.52%	42.42%	29.19%
2005	22.7%	39.3%	34.0%	27.16%	41.77%	30.51%
2006	22.9%	39.9%	33.4%	27.30%	41.80%	30.35%
2007	23.8%	40.7%	33.3%	25.15%	39.84%	29.19%
2008	23.3%	40.6%	34.2%	26.47%	41.22%	31.65%
2009	23.0%	40.5%	34.4%	25.38%	41.77%	32.19%
2010	23.4%	40.6%	34.4%	24.93%	42.12%	32.60%
2011	22.6%	40.9%	34.9%	24.03%	42.27%	33.33%
2012	25.3%	41.7%	32.8%	23.44%	42.24%	34.12%
2013	21.9%	41.7%	34.9%	21.64%	41.69%	35.58%
2014	20.3%	42.9%	35.3%	20.25%	41.94%	36.65%
2015	19.0%	42.9%	36.5%	19.55%	41.66%	37.83%
2016	18.6%	42.7%	36.9%	19.04%	41.36%	38.32%
2017	18.2%	42.5%	37.3%	18.56%	41.12%	38.42%

Source: Data from EUROSTAT, 2019

To depict the trends of teaching staff percentages between the ages of 18 and 34, fig. no. 1 shows comparatively the percentages for EU and Eurozone.

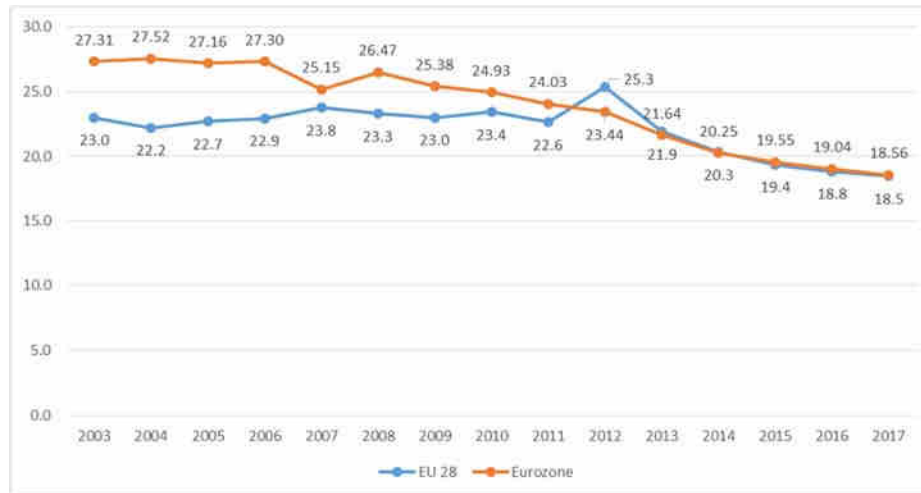


Fig. no. 1 Trends of teaching staff aged between 18 and 34 (percentage of total staff)

Source: Data from EUROSTAT, 2019

Analyzing the data in fig. no. 1 we can see a clear tendency, both series of data recording a clear decrease. This phenomenon may be caused mainly by the aging of the population, but there are other important factors such as: obstacles to system entry, decrease in number of jobs, high unemployment among young people (Eurydice, 2018).

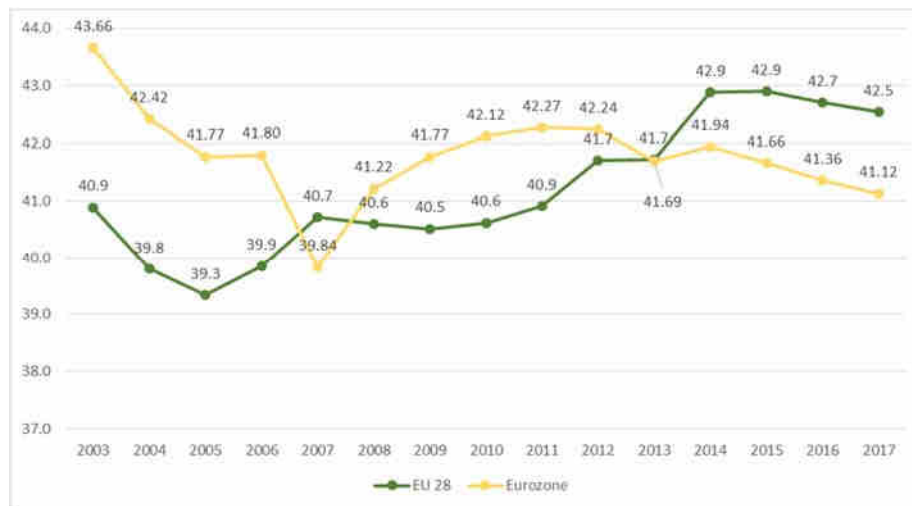


Fig. no. 2 Trends of teaching staff aged between 35 and 49 years (percentage of total staff)

Source: Data from EUROSTAT, 2019

Based on analysis of fig. no. 2 we conclude that trends are differentiated at the level of the European Union and the Eurozone, due to the fact that at the level of the European Union

there is a lower degree of homogeneity than at the level of the Eurozone. Fig. no. 3 illustrates the evolutions of teaching staff aged 50 and 65 years and above.

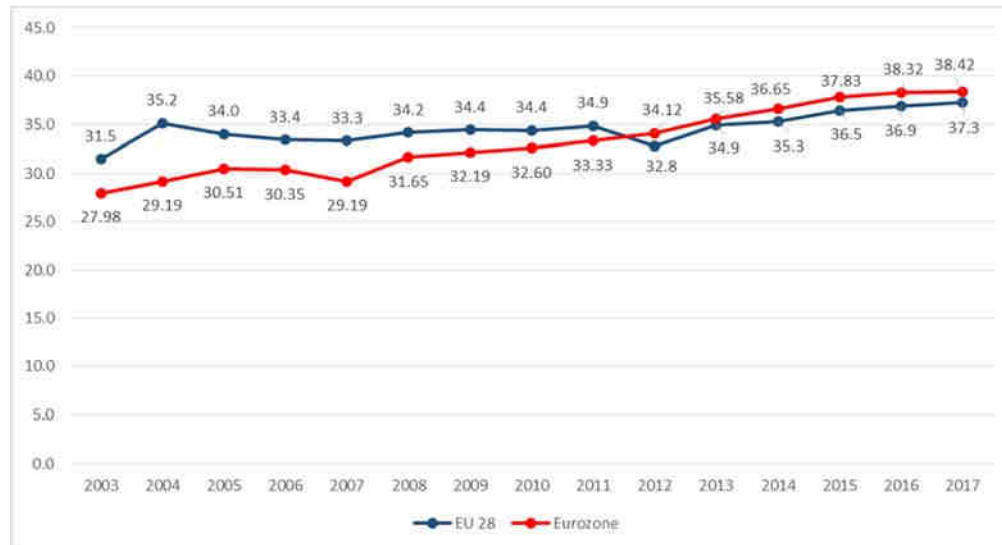


Fig. no. 3 Trends of teaching staff aged between 50 and 65 years and above (percentage of total staff)

Source: Data from EUROSTAT, 2019

Fig. no. 3 illustrates the aging phenomenon that affects the workforce. A longitudinal analysis conducted at the level of 2017 shows a relatively well-adjusted age structure (fig. no. 4).

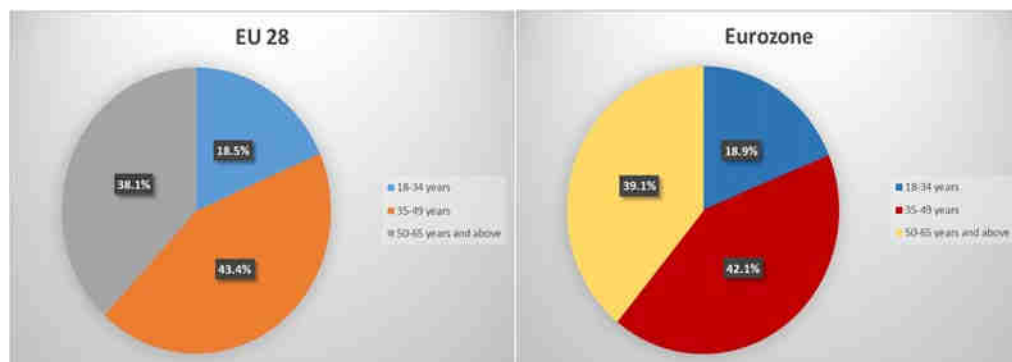


Fig. no. 4 Age structure of the teaching staff of the in 2017

Source: Data from EUROSTAT, 2019

Particular attention should be paid to the age group between 18 and 34, as this is practically the future of the teaching profession. A small number of teaching staff indicate a crisis of experienced personnel in this area in the future, when the senior teachers will gradually leave the system.

Analyzing the trend recorded in the period 2003-2017 of the teaching staff aged between 18 and 34 years in each country, it can be seen that some countries, which presently have a balanced structure, have to deal with workforce aging. Fig. no. 5 shows the evolution of teaching staff between aged between 18 and 3 in 2017 compared to 2003.

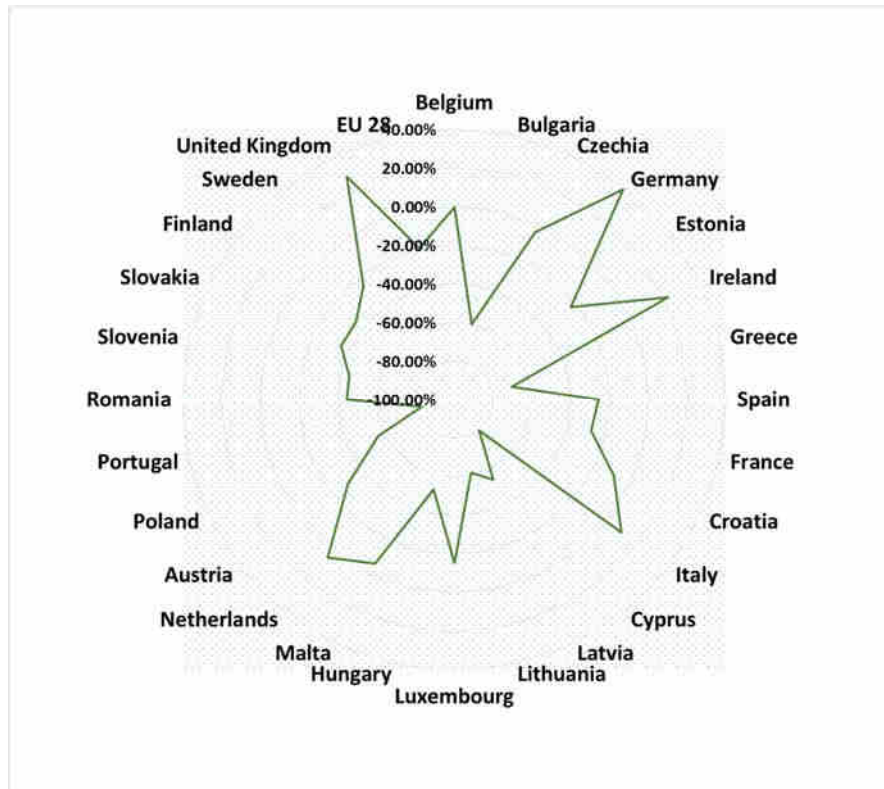


Fig. no. 5 Evolution of teaching staff aged between 18 and 34 years (EU level) in 2017 compared to 2003 (percentage change)

Source: Data from EUROSTAT, 2019

Based on the research results we can conclude that the hypothesis H1 is validated for the period studied (2003-2017). The age structure is relatively similar, the gaps waning as a result of the development of the countries outside the Eurozone.

Teacher aging is a common phenomenon in all European countries. On average, over 37% of teachers in pre-university years are 50 years old or older, with a substantially higher ratio in some countries: 53.1% in Italy, 48.1% in Lithuania, 47.5% in Austria and 46.4% in Greece. At the opposite pole are countries with a small percentage of teachers in pre-university schools aged 50 or over, such as Malta (14.9%), Great Britain (21.6%), Luxembourg (27%) (Eurostat, 2019). The scattering of teachers by age groups point out that the vast majority of teachers retire as soon as they can (Eurydice, 2015). This situation is exacerbated by the early retirement used as a measure to prevent mass layoffs in times of crisis. Though, in most EU countries the retirement age is over 65 years old today (Mangra et al., 2009). Diminished birth rates and, therefore, the decreased number of children do not offset the frequent departures of teachers. Moreover, some countries have reduced the number of pupils per class, thus increasing the need for new recruits (European Commission, 2013).

In order to investigate the validity of the H2 hypothesis we have collected synthetic data that characterize indicators at EU level and the Eurozone. The synthetic situation is shown in table no. 2.

Table no. 2 Evolution of teaching staff gender structure

	European Union (28 countries)		Eurozone (19 countries)	
	Female	Male	Female	Male
2003	68.9%	31.1%	30.0%	70.0%
2004	68.2%	31.8%	29.6%	70.4%
2005	69.2%	30.8%	29.2%	70.8%
2006	69.5%	30.5%	28.8%	71.2%
2007	70.0%	30.0%	28.5%	71.5%
2008	70.2%	29.8%	28.2%	71.8%
2009	70.5%	29.5%	27.8%	72.2%
2010	70.9%	29.1%	27.6%	72.4%
2011	71.1%	28.9%	27.4%	72.6%
2012	70.2%	29.8%	26.7%	73.3%
2013	74.5%	25.5%	26.7%	73.3%
2014	74.7%	25.3%	26.0%	74.0%
2015	74.5%	25.5%	26.4%	73.6%
2016	74.8%	25.2%	26.2%	73.8%
2017	72.2%	27.8%	26.0%	74.0%

Source: Data from EUROSTAT, 2019

The evolution of female teaching staff at EU and Eurozone level is illustrated in the Figure no 6.

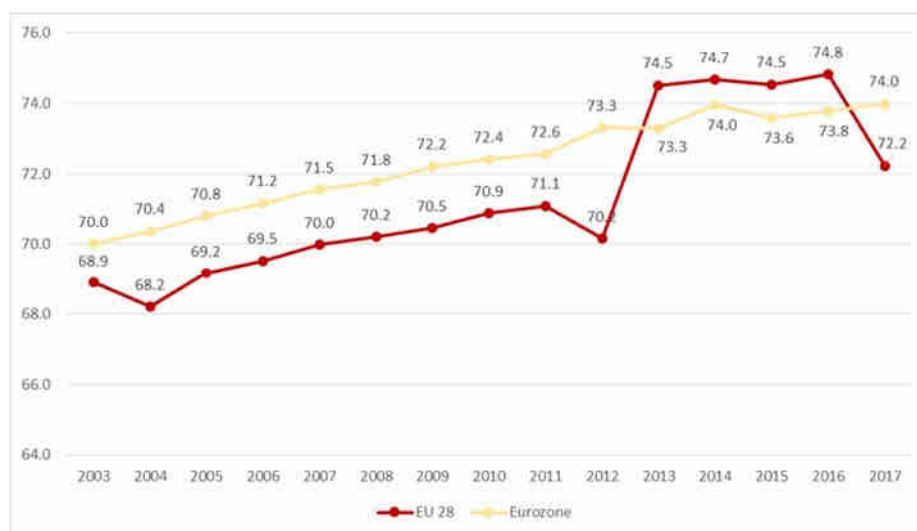


Fig. no. 6 Evolution of female teaching staff share in total personnel

Source: Data from EUROSTAT, 2019

Analyzing the data in fig. no. 6 it can be observed that the female teaching staff clearly overtakes the male teaching staff in the HR structure, recording in addition an increasing tendency of both series of data. This phenomenon is specific to the sector, as a result of the idea that the teaching profession is more suitable for female teaching staff.

In addition, the male teaching staff has a low share, both series of data recording a decreasing trend (fig. no. 7).

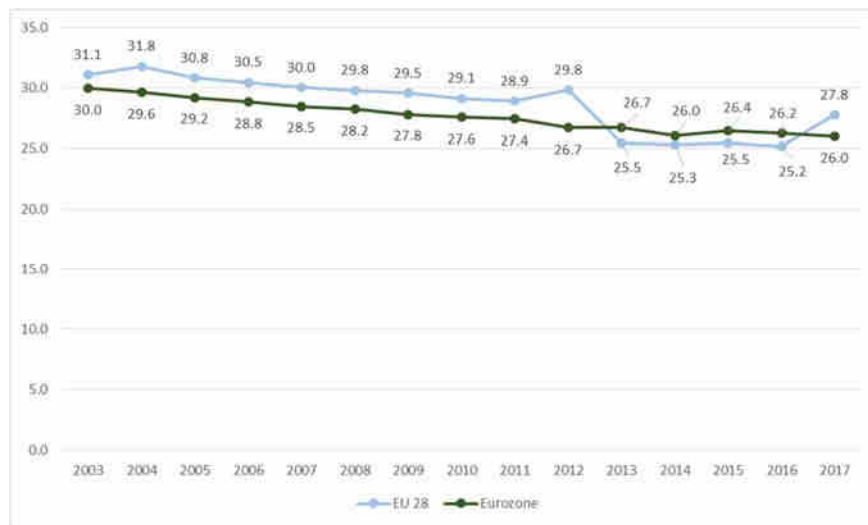


Fig. no. 7 Evolution of male teaching staff share in total personnel

Source: Data from EUROSTAT, 2019

Following the results of the aggregated synthetic data at the EU level, we can conclude that the hypothesis H2 is validated for the period studied (2003-2017). There is a differentiation among countries depending on the degree of economic development and culture, but in all the countries female teaching staff overtakes the male staff in education.

The feminization of the teaching profession, which is particularly high for ISCED 1, should also be considered when analyzing the retirement age (which in many countries is lower than for men). This high ratio of women eligible for retirement (Eurydice, 2015) is likely to aggravate the deficit.

Conclusions

Currently, there are an increasing imbalance in terms of age and gender structure, which requires action by education decision makers. In this paper we set out to investigate structure by gender and age of teaching staff from pre-university education system in the European Union. In this regard, we formulated two hypotheses that were subjected to a validation process, during the research.

Researching the first hypothesis we found that in most EU countries, teaching staff show a relatively balanced age structure, the gaps between EU and Eurozone waning as a result of the development of the countries outside the Eurozone. In terms of gender structure in most EU countries, the number of female teaching staff significantly exceeds the number of male teaching staff, education being a predominantly female field.

In order for an education system to be effective, governmental authorities through the Ministry of Education must manage teaching to ensure a balanced structure both in terms of age and gender. Therefore, education decision makers must encourage young people to choose the teacher profession by increasing the attractiveness of this profession and build a culture that encourages males to choose this profession, in order to prevent future structural imbalances that may affect the workforce in the education system.

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INTEGRATIVE APPROACHES OF BUSINESS ETHICS, CORPORATE GOVERNANCE AND SOCIAL RESPONSIBILITY

**Michael Marian Nicolescu¹, Claudiu George Bocean²
and Anca Antoaneta Vărzaru³**

^{1) 2) 3)} *University of Craiova, Romania*

E-mail: nicolescumichaelmarian@gmail.com; E-mail: boceanclaudiu@yahoo.com;

E-mail: varzaruanca@yahoo.com

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Abstract

Although the success of an organization appears to be related to financial performance, currently there is an important issue in literature and within society about the organizations' social attribute and responsibility. Business ethics (BE), corporate governance (CG) and social responsibility (SR) are concepts developed in recent decades in response to the growing number of corporate offenses. These three movements have generated so far less widely accepted requirements for improving business behavior. The main purpose of the paper is to explore these concepts, in a future where SR and CG must be seen in the context of a general paradigm of business ethics, but not limited to ethical responsibilities and also incorporating other types of responsibilities: economic, legal and philanthropic. In the paper we will conduct an exploratory research of the literature using an integrative vision, which allows us to propose a series of models for integrating business ethics, corporate governance and social responsibility. Following exploratory research, we came to the conclusion that corporate governance and SR are a subsequent component of business ethics, but also includes other additional dimensions. Implementation of these concepts in the organizational culture is a primary condition for organization sustainability.

Keywords

Social responsibility, corporate governance, business ethics, sustainability

JEL Classification

M14, G34, Q56

Introduction

Ethical behavior and social responsibility can bring substantial profits to an organization. The idea that organizations have some responsibilities towards society, beyond the primary

obligation to produce a profit for the investors is an idea entrenched for centuries (Carroll, 2000). Consequently the concept of SR continued to raise in significance and strength (Carroll and Shabana, 2010). Since the economic responsibilities aim goods and services production and making profits that allow survival and growth of the organization, ethical responsibilities treat requirements of other stakeholders.

The concepts of BE and SR are often “used interchangeably, although each has a distinct meaning” (Carroll, 1989, p. 67). If BE is a business philosophy that comprises principles and moral standards of business sphere (Puiu, 2015), SR is an integrative management concept that states a responsible behavior, according to the goals, values and interests of stakeholders. Companies that reliably prove an ethical and socially responsible behavior obtain a superior performance (Carroll, 1989).

Relationship between SR, CG, BS and sustainability are complex, requiring a series of integrated models to be better understood (Flammer, 2015). Management literature tried to explain the relationship among these concepts using policy and strategy as moderating factors (Carroll 1999; Zingales et al., 2016). It provided some definitions and demonstrated the ways in which management practices and organizational strategy depend on sustainability orientation (Stanciu et al, 2010).

In this paper we aim to explore the relationship among CG, SR and BE, proposing a series of integrative approaches to eliminate existing redundancies. The first section is an introduction to the research topic. In the second section we presented the research methodology. The third section presents the organization as an open system and relationship with its stakeholders in the perspective of CG, SR and BE. The fourth section explores the relationship among CG, SR and BE. In the fifth section we point out the results of research: theoretical proposal of three types of integrative approaches. The last section concludes by providing directions for future research.

Research Methodology

The paper will adopt a holistic approach to the role of the organization in society, its responsibilities towards the organization in which it operates, its responsibilities to all stakeholders including its employees and the ethical foundation that must exist for any form of honest reporting. No organization will look just as a reporting entity that follows a set of rules or nebulous concept, but as an organic part of the business environment.

In this paper we carry out a review of the mainstream literature using analysis and synthesis, deduction and induction. In this regard, we undertake a thorough examination of the principles of SR and a narrative description to summarize various issues about among CG, SR and BE, based on which the integrative approaches and conclusions were formulated. The strength of this methodology is that it allows understanding the plurality of ideas and opinions around academic research on this topic. Thus, the focus was on a core element that has been approached from different points of view the integration among CG, SR and BE in order to generate a sustainable development of the organization, offering a series of results that will be the basis of future empirical research.

Organization as an open system and relationships with its stakeholders

Organizations can be seen as open, complex, dynamic and self-regulating systems characterized by a number of features (Daft, 2015). Therefore, companies are required to seek to maximize profits, which leads first to an increase in the organization’ value and secondly to the possibility to distribute dividends for their owners. The first responsibility is to the organization’ owners. Fulfilling this primary responsibility is done through management organization to conduct its operations effectively and efficiently in order to obtain bigger profits. CG has emerged as a concept that deals with relationships between owners (divided into two categories: majority shareholders that have high power of decision and minority

shareholders who have to submit to majority decisions), company managers and to a lesser extent company's employees. In addition to these internal stakeholders of the company there are other stakeholders who have interests related to the company and whose needs and requirements that company managers should consider: customers, suppliers, public authorities, communities, society in general. SR has emerged as a concept that deals with relationships between organizations and all stakeholders, both internal (owners, managers, employees) and external (customers, suppliers, public authorities, communities, society in general) (Carroll, 1989). A graphic illustration of the organization as an open system is presented in fig. no.1.

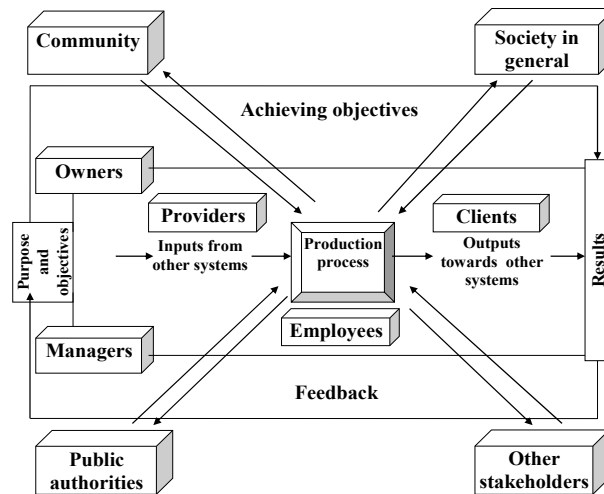


Fig. no. 1 Organization as an open system and relationship with its stakeholders

Source: Developed by authors

Business ethics preceded the two concepts (CG and SR), being a transposition of the principles of ethics and morals in business. It is a broad concept covering all levels and business activities, representing the basis for principles of CG and SR.

Relationship between CG, SR, BE and sustainability

In particular, large corporations play a key role in society. However, all organizations, regardless of size, must assume a role in SR actions. Hierarchically-functional organizational structures of a bureaucratic nature that are found in most organizations are not compatible with the social component of the business. Leadership still maintains the power to take decisions affecting employees and other stakeholders, as they are the actors and promoters of SR actions. Managers play an important role in the implementing ethical and responsible policies of the organization implemented with the help of employees and other stakeholders (Nicolaidis, 2018, Barbu, Logofatu and Olari, 2019).

The requirements of the society to the organizations are: a solid and correct governance that works, a solid business ethics and SR policies integrate the first two by default. A good governance and ethics are an internal part of SR (fig. no.2).

Responsibility and transparency may be deeply implemented in the organizations' DNA only if management is able to develop a clear vision of sustainability in their organization. The results of good CG, of ethical and responsible behavior of the organization are ultimately transposed to ensure the sustainability of the organization on its three vectors: the economic vector, the social vector and the environmental vector.

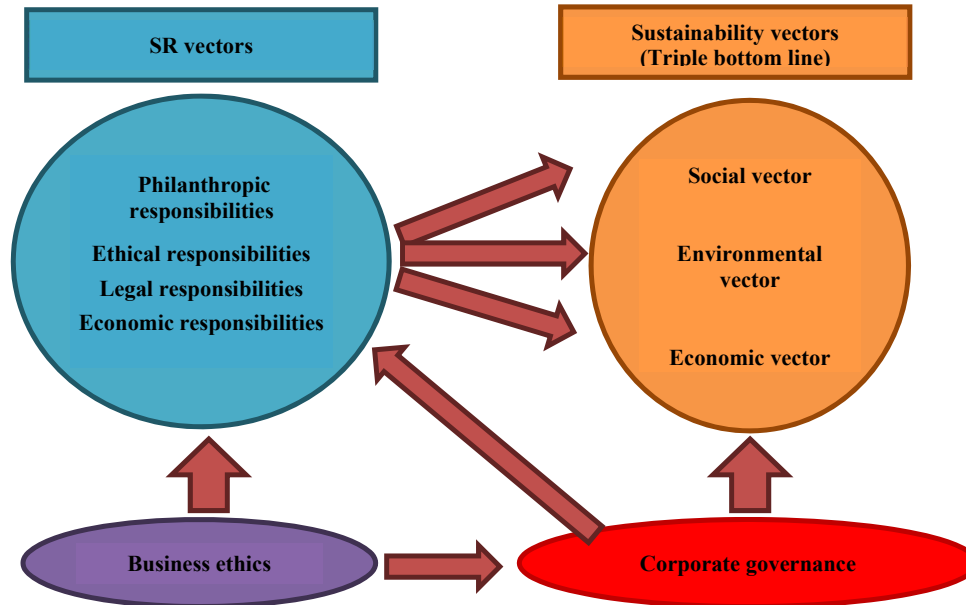


Fig. no. 2 The relationship among CG, SR, BE and sustainability

Source: Developed by authors

Also, SR must penetrate through all organizational structures to all employees. A common set of values must be incorporated at employees and introduced through programs and codes of conduct and ethics, these having strong links with SR. The codes should be written and understandable if the management hopes to get compliance (Nicolaidis, 2018).

Results and discussions

Research results aim at exploring SR and CG in the context of BE, emphasizing the relations that are established between the three domains. Thus, we propose at a theoretically level three types of integrative approaches of the three areas: addressing the intertwined relationships of "DNA" and focused approach of "sun", instrumental approach.

A. An intertwined relations approach of "DNA"

This approach is inspired by Freeman's (1984) normative theory on stakeholder and the concept that organizations are "living organisms, parts of biological and social environment around them" (Bjerregaard and Luring 2013, p.134).

Organizations are part of the social, economic and environmental systems in which they operate. Therefore, in all activities, structures and processes, organizations must take responsibility for the impact produced on all stakeholders. The impact that an organization has on the community and society in general, the current one, but also the one expected in the future, must be built into the organization' DNA and BE and SR must be treated interchangeably, as illustrated in fig. no.3.

Current tendencies in this area seem to focus on SR, while ethics is seen more as a business philosophy which finds its applicability only in codes of ethics and codes of conduct. In our opinion, business ethics together with philosophy to maximize profits are the sequences on which the DNA of a sustainable business is built. These sequences are supported in practical terms by concepts and action programs in the areas of SR, CG and corporate citizenship, the final result being the assurance of organizational sustainability.

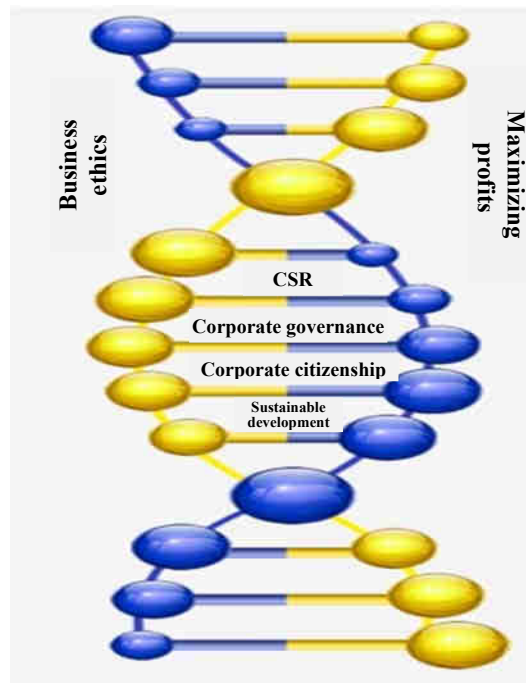


Fig. no. 3 The DNA of an ethical, socially responsible and sustainable organization
 Source: Developed by authors

B. "Sun" pattern - concentric approach

Another integrative approach we propose involves the circumscription of the four concepts (CG, SR, BE, sustainability) in a concentric pattern of "sun" (fig. no.4).

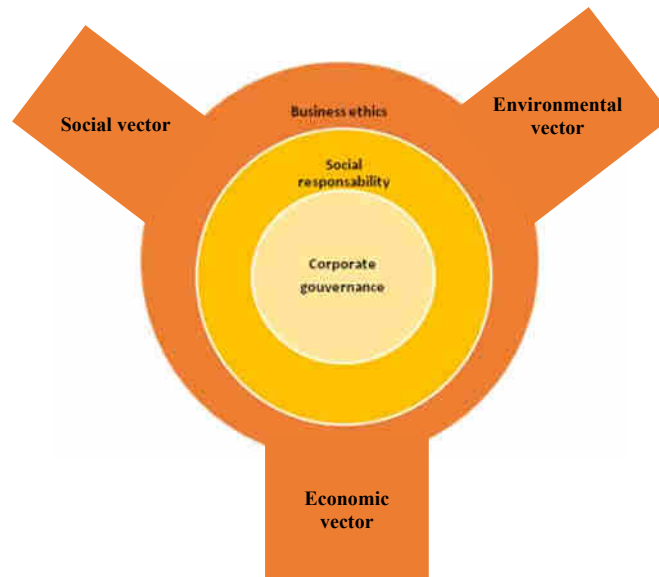


Fig. no. 4 "Sun" pattern - concentric approach
 Source: Developed by authors

CG is the core of this model being the force that integrates and accounts internal stakeholders: stakeholders (owners that make the strategic decisions through general meetings of shareholders and boards), managers (who put into practice strategic decisions, make the necessary tactical decisions and a part of the operational) and employees with executive function (who carry out management decisions and depending on the degree of autonomy given, make decisions on activities that affect them).

The second layer of the concentric model is the SR that adds to the attention of the internal stakeholders' the concern for the external stakeholders' requirements. A socially responsible organization looks beyond its borders and integrates into the organizational strategy the interests of external stakeholders: suppliers, customers, public authorities, business organizations, trade unions, community, and society as a whole. Thus, the organization has initiatives in the area of SR or promotes responsible behavior in relation to business partners and regulatory or fiscal authority.

The third layer of the concentric model is BE, which through two instruments (code of ethics and code of conduct) integrates into organizational behavior the principles of BE and conduct requirements that ensure the implementation of mechanisms for making ethical decision. If CG strictly concerns management relations between internal stakeholders, SR concerns both internal and external relations of the organization with the external environment, BE provides principles underlying these relations and behavioral models, with a wide range of action that covers the entire activity of the organization.

The fourth component of the model is the sustainability that manifests itself in the form of outputs, the three vectors "triple bottom line" approach: economic vector, environmental vector, social vector. This component takes on the principles, requirements, and behavior patterns of CG, SR and BE and integrates them into the organization's strategy providing a way for the organization's survival and growth in sustainable conditions.

The model offers the organization coherence in addressing stakeholders and ethical issues faced in the activity, providing a solid basis for the sustainability.

C. Instrumental approach

The models presented are theoretical and, in order to be implemented in practice, is needed an instrumental approach that enables the integration and the tools used by the three areas underlying the development of a sustainable business: CG, SR, and BE.

Table no.1 provides an integrative view on the tools used by these three areas, adapt and integrate them into a common tool we propose, a tool we have called implementation program for organizational sustainability.

This program of implementing organizational sustainability represents practically a unique tool that integrates all other specific instruments of CG, SR and BE into a single document containing the principles of CG, SR and BE, prescriptions conduct, actions to be taken, results to be tracked and measured. Such an implementation program for organizational sustainability would be an integrated tool that provides competitive advantage to the implementing organization. Workers will be able to better manage the information on how an organization can act to sustainability, eliminating the plurality of existing codes of organization, ensuring consistency of policy sustainability.

Such a tool should use Jorgensen model methodology on the integrated management system (Jorgensen et al, 2006), which involves three levels of integration (compatibility, coordination, integration). Compatibility means ensuring the correspondence between the codes and regulations of conduct specific to CG, the organization's SR, BE, eliminating dubbing, confusion and redundancies.

Table no. 1 Tools used by CG, SR and BE

Area	Instruments		Result	Directions
Corporate governance	Corporate governance codes	 Implementation program of organizational sustainability	Sustainable development	Economic vector
Social responsibility	SR initiatives; Standards (ISO 26000); Tools for measuring social and environmental performance			Social vector
Business ethics	Codes of ethics; Codes of conduct			Environmental vector

Source: Developed by authors

Coordination ensures the alignment of principles and behaviors within the processes and activities. Integration implies the interweaving principles prescriptions of conduct, behavior patterns and action, in order to develop a single process that is the basis for ensuring the sustainability in the three lines (economic, social and environmental).

Conclusions

Since the second half of the twentieth century, literature has undertaken an examination of the role of business in society (Carroll, 1999). At the focus of this trend was a strong emphasis on the ethical dimensions of the business (Crane and Matten, 2010) and the organizations' responsibilities for its stakeholders, not just towards shareholders (Freeman and others, 2010). The researchers studying these approaches have done it both conceptually and empirically, but the concepts and approaches related to BE and SR are still changing and highly disputed in the mainstream literature (Crane and others, 2008).

This paper aims to contribute to the BE literature and to solving problems related to the difficult and deficient implementation of the concepts of BE, SR, CG and sustainability. Weaver and Trevino's (1999) observation from almost two decades ago is still relevant, suggesting "questions remain about the relationship between SR, corporate reputation, corporate citizenship, corporate philanthropy and corporate crime, and the links between them and business ethics." Through this research we explored the conceptual relevance assumed between CG, SR and BE in academic literature and its reflection in business practice. This relationship is analyzed through a triple approach and aims to align and integrate these practices into a unitary practice that eliminates redundancies and will be easier to implement. In the future research we will study the effects of adopting integrated practices in the area of CG, BE and SR on the sustainability of the organization in the perception of managers, employees and clients.

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ETHICS AND DISCLOSURE OF ACCOUNTING, FINANCIAL AND SOCIAL INFORMATION WITHIN LISTED COMPANIES. EVIDENCE FROM THE BUCHAREST STOCK EXCHANGE

Michael Marian Nicolescu¹ and Anca Antoaneta Vărzaru²

^{1) 2)} University of Craiova, Romania

E-mail: niculescumichaelmarian@gmail.com; E-mail: varzaruanca@yahoo.com

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Abstract

Organizational behavior reports are extremely important both for organizations that issue these reports as well as stakeholders such organizations, and mainly investors, customers, suppliers, competitors and public agencies that are informed of these reports. In their reports, organizations reveal themselves to the society, trying to create an image, communicated explicitly and implicitly, on the activities and vision of the organization, trying to improve their reputation and to communicate objectively the decisions and the fulfillment of objectives. The ethics of organizational reporting must focus on the fundamental requirements of transparency and trust, as well as the shared responsibilities of those who produce, certify and use these reports.

In this paper we will study the practice of information disclosure in a research sample of companies selected from Bucharest Stock Exchange, quantifying the qualitative information disclosed on financial reporting, the mission and vision of the company, corporate governance, social responsibility, environmental issues, attracting human resources, sustainability, through websites of selected companies.

Keywords

Ethics, disclosure, accounting, financial and social information, social responsibility

JEL Classification

M14, G34, Q56

Introduction

Accounting ethics, financial and social reporting addresses a number of issues regarding reporting, accuracy, use and credibility of reports: the correctness and completeness of these organizational reports, masking of certain issues by hiding behind formalities, reliability and

validity of these reports, the responsibility for the accuracy reports, the reporting of nonfinancial performance.

Until the 1990s the accuracy of financial reporting was not a very much addressed issue. With the financial scandals of the millennium (Enron and WorldCom), suspicions about the fairness of presentation of an organization's activities and results have grown exponentially. Although the reports were certified by publicly recognized auditors, they misrepresented the financial performance of companies, as a result of unethical practices of hiding information (Enderle, 2004).

The existing regulatory framework at that time did not stop, but encouraged practices and conflicts of interest (between auditors and investors). The accounting rules and realization of investment were vague, providing insufficient guidance on complex issues. We can say that at the beginning of the millennium companies from the energy, accounting, banking and investment industry, and professional associations of Certified Public Accountants have affected, to various degrees, quality and confidence in financial-accounting reports.

In order to ensure the ethics of financial and accounting reporting, it is important to define the scope to which ethics should be applied and to establish the responsibilities attached to the authority entrusted to various actors' disclosure of financial information and accounting (Sitnikov and Bocean, 2012). Financial reporting involves information providers, organizations that certify or audit reports and those using the financial and accounting statements.

Disclosure of accurate, complete and timely accounting financial information, as well as non-financial information (hereafter NFI) on sustainability is essential for the efficient functioning of capital markets and ensuring the survival of the constituent companies of the capital market. The quality of information diminishes information asymmetry phenomenon defined by agent theory (Healy and Palepu, 2001; Sitnikov and Bocean, 2010).

While the regulation of financial and accounting disclosure activities is over 70 years old, and with the financial scandals of the turn of the century (Enron, WorldCom, Lehman Brothers, etc.) the public's attention has focused on it, reporting the disclosure non-financial information (NFI) by organizations is a relatively new field and very little regulated (Enderle, 2004). There have been several attempts in recent years to provide a generally accepted framework (GRI, ISO 26000 etc.), but failed to impose regulatory bodies, remaining at the level of voluntary guidelines. Currently, the disclosure of NFI within the organization is achieved through sustainability reports or social responsibility reports, which, however, do not have a generally established form, the organizations using different guidelines to orient themselves in structuring these reports.

The paper is divided into five sections. After the introduction of the first section we conducted a review of the mainstream literature. The third section presents the research methodology, while the fourth section presents the results of research. The last section concludes and provides future research directions.

Literature review

Disclosure of information by the company is the communication of information by people inside or outside of the company. Previous studies on information disclosure practices are extensive, cover a wide range of issues and use a variety of indices to measure the quality of information disclosure. The aim of this paper is to analyze and compare the quality level of disclosure of financial and non-financial information (hereafter FNFI) on social responsibility and sustainability using qualitative indices of information disclosure and by aggregating a total index on disclosure by an organization. The annual reports aim to "communicate with users and, in an easy and clear way, to provide relevant, reliable and relevant information about past, present and future organizational activities" (Breton, 2009).

Many authors emphasize the importance of the elements in the annual report (Santema and van de Rijt, 2001; Linsley and Shrives, 2006; Li, 2008). Cerf (1961) built the first index of information disclosure, the idea being taken over and then used in countless works. Disclosure indices are generally based on an analysis of information, based on pre-established elements and awarding a score for the existence of these elements. While researches on information disclosure have received increased attention from researchers in developed countries, only a few studies in this area with applicability in less developed economies can be emphasized (Pivac et al., 2017).

Transparency and disclosure of information are essential elements of ethics and social responsibility, as they provide the basis for informed decision-making by all company's stakeholders. The importance of transparency has been extensively established both within the scientific world and within the regulatory authorities, which has led to the gradual implementation of numerous rules and regulations to generate a fast, precise and accurate disclosure of FNFI (Fung, 2014). In this regard, there have emerged reporting standards in the financial field that companies must comply with, as well as codes (ethics, conduct, corporate governance etc.) and initiatives in the field of social responsibility and sustainability.

Research Methodology and Hypotheses

In order to empirically evaluate the disclosure activity, different levels of information disclosure by companies need to be compared. Some authors make comparisons between firms, others use temporal comparisons. In this paper we chose to make comparisons among companies.

Rapid technological expansion has an impact on corporate governance, especially regarding corporate information disclosure practices (Hashim et al., 2014). The Internet allows companies to effectively and instantly disclose their corporate information to the public, including international users (Wagenhofer, 2003). Andrikopoulos et al. (2013) believe that the performance of companies can increase as a result of improving the disclosure of FNFI through the Internet, with an influence between the transparency manifested in the disclosure of information and the company performance. Stock exchanges react positively to greater transparency in information disclosure and become more efficient (Gul and Leung, 2004).

In this paper we will study the practice of mandatory and voluntary disclosure of information regarding financial reporting, the mission and vision of the company, corporate governance, social responsibility, environmental issues, attracting human resources, sustainability. In order to carry out the study, we selected 12 companies that are listed at the Bucharest Stock Exchange (hereafter as BSE) and have a listing of more than five years. To determine the amount of information disclosed online by companies, an analysis was performed on the companies' websites to identify them. The information content from the companies' websites was researched in depth using the content analysis technique, to build indices for the disclosure of FNFI, a technique used also by other authors. This analysis technique was used to study the information included in companies' annual reports (Sanchez et al., 2011; Shan, 2013; Hashim et al., 2014).

Following the research of the mainstream literature and after collecting the primary data, we formulated two hypotheses:

H1. The value of disclosure index on financial information (DFI) is higher than the value of disclosure index of NFI (DFI) via the Internet, due to the fact that the disclosure of financial information is mandatory.

H2. The disclosure indices of FNFI via the Internet, as well as the total disclosure index (hereafter as TDI), influence share value evolution as a result of improving the image and reputation of the respective companies.

The two hypotheses will be subjected to research and validation, using the content analysis technique of companies' websites to identify the information disclosed, as well as a series of statistical-mathematical techniques to identify the relationships between the index values established through a qualitative process and the shares' value evolution of the companies within the BSE.

Results and discussions

To build the financial information disclosure index, we have selected five criteria, which were the basis for quantification, each of these having a series of sub-criteria (consistency of the data presented, accessibility, data presentation, language used). Table no.1 presents the DFI for the selected companies, based on the following criteria: annual financial-accounting reports, quarterly financial-accounting reports, presentation of current reports and boards decisions, presentation of results and financial calendar, corporate governance rules.

Table no. 1 Financial Disclosure – investor relations

	Annual accounts and financial reports	Quarterly accounting and financial reporting	Overview current reports and AGS decisions	Presentations of results and financial calendar	Corporate governance rules	Disclosure of financial information index (DFI) Total (50 points max)
ALRO S.A.	8	8	10	10	4	40
BANCA TRANSILVANIA S.A.	10	10	10	10	10	50
BRD - GROUPE SOCIETE GENERALE S.A.	10	10	10	10	8	48
BURSA DE VALORI BUCURESTI SA	10	10	10	10	10	50
C.N.T.E.E. TRANSELECTRICA	10	10	10	10	5	45
CONPET SA	10	10	10	10	10	50
FONDUL PROPRIETATEA	10	10	10	10	10	50
OMV PETROM S.A.	10	10	10	10	4	44
S.N. NUCLEARELECTRICA S.A.	10	10	10	10	10	50
S.N.G.N. ROMGAZ S.A.	8	8	10	10	4	40
S.N.T.G.N. TRANSGAZ S.A.	10	10	10	10	4	44
SOCIETATEA ENERGETICA ELECTRICA S.A.	10	10	10	10	4	44

Source: BSE, 2020

Table no.2 presents the NFI disclosure index for the selected companies, based on the following criteria: sustainability reporting, mission and vision presentation, environmental protection, career section, social responsibility.

Table no. 2 Non-financial disclosure - the relationship with other stakeholders

	Sustainability Reports	Mission and Vision Presentation	Environmental protection	Careers section	Social responsibility	Disclosure of nonfinancial information index (DNI) Total (50 points maximum)
ALRO S.A.	10	0	10	0	8	28
BANCA TRANSILVANIA S.A.	10	10	0	10	10	40
BRD - GROUPE SOCIETE GENERALE S.A.	6	10	0	10	10	36
BURSA DE VALORI BUCURESTI SA	5	10	0	10	5	30
C.N.T.E.E. TRANSELECTRICA	2	10	10	2	4	30
CONPET SA	0	10	10	0	2	32
FONDUL PROPRIETATEA	0	10	0	0	0	10
OMV PETROM S.A.	8	10	10	10	10	48

S.N. NUCLEARELECTRICA S.A.	10	10	10	4	10	44
S.N.G.N. ROMGAZ S.A.	10	10	10	3	10	43
S.N.T.G.N. TRANSGAZ S.A.	2	10	4	4	6	26
SOCIETATEA ENERGETICA ELECTRICA S.A.	10	10	10	2	8	40

Source: BSE, 2020

Table no.3 presents the indices of disclosure of FNFI through the Internet, the aggregate total index and the evolution of the value of the shares of the companies.

Table no. 3 Indices of information disclosure compared with the share value evolution

	Indices of disclosure of information			Evolution of shares in one year (from date 02/13/2020)
	Disclosure of financial information index (DFI)	Disclosure of nonfinancial information index (DNI)	Total disclosure index (TDI)	
ALRO S.A.	40	28	68	-9.16%
BANCA TRANSILVANIA S.A.	50	40	90	37.50%
BRD - GROUPE SOCIETE GENERALE S.A.	48	36	84	34.05%
BURSA DE VALORI BUCURESTI SA	50	30	80	4.08%
C.N.T.E.E. TRANSELECTRICA	45	30	75	-6.67%
CONPET SA	50	32	82	-0.37%
FONDUL PROPRIETATEA	50	10	60	62.89%
OMV PETROM S.A.	44	48	92	21.43%
S.N. NUCLEARELECTRICA S.A.	50	44	94	72.44%
S.N.G.N. ROMGAZ S.A.	40	43	83	9.84%
S.N.T.G.N. TRANSGAZ S.A.	44	26	70	-3.89%
SOCIETATEA ENERGETICA ELECTRICA S.A.	44	40	84	1.12%

Source: BSE, 2020

By comparing the values of the DFI and DNI, we observed greater values of DFI compared with DNI due to the fact that the disclosure of the financial information is mandatory and it is better and unitary regulated. Consequently, we can consider that hypothesis H1 is validated, which is in correspondence with Chandler researches results (1997) and Healy and Palepu's (2001).

To investigate the H2 hypothesis, we calculated the correlations that are established between the information disclosure indices and share value evolution (table no.4).

Table no. 4 Correlation of indices of information disclosure compared with the share value evolution

		DFI	DNI	TDI	Share value evolution
DFI	Pearson Correlation	1	-0.203	0.178	0.577 *
	Sig. (2-tailed)		0.527	0.580	0.049
DNI	Pearson Correlation	-0.203	1	0.927 **	0.006
	Sig. (2-tailed)	0.527		0.000	0.985
TDI	Pearson Correlation	0.178	0.927 **	1	0.227
	Sig. (2-tailed)	0.580	0.000		0.479
Share Evolution	Pearson Correlation	0.577 *	0.006	0.227	1
	Sig. (2-tailed)	0.049	0.985	0.479	

*. Correlation is average. **. Correlation is strong.

Source: Developed by authors based on the collected data

Following the analysis of table no.3, we observed that there is a relatively good correlation between the share value evolution and the DFI, an index that quantifies the information transparency that particularly interests investors. The financial information does not have a clear influence on the evolution of the share value for the selected companies and the period taken into account. In order to carry out an in-depth analysis, we used an analysis model of artificial neural networks that are established between the four variables, the evolution of the share value being the independent variable. Fig. no.1 shows the relationships that are established between the variables following the use of a multilayer perceptron model.

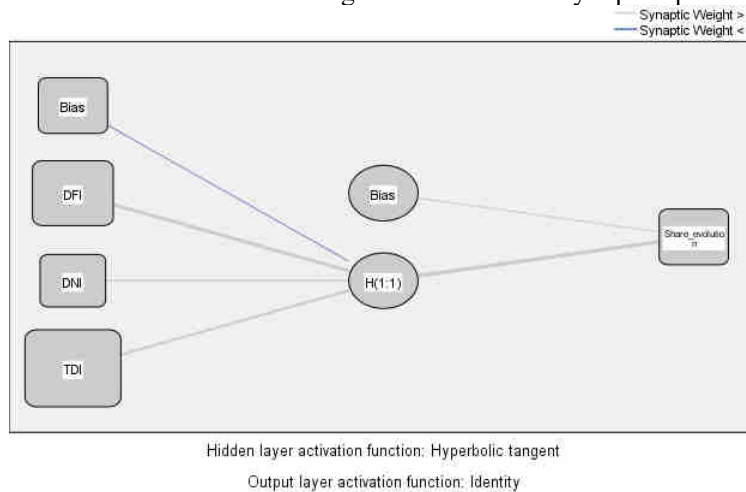


Fig. no. 1 Model of multilayer perceptron indices used to detect the influence of disclosure indices on share value development companies

Source: Developed by authors based on the collected data

As a function of activating the hidden layer (the image and reputation of the company) we used the identity function, and as a function of activating the output layer (the evolution of the value of the shares of the companies) we used the hyperbolic tangent function.

Table no. 5 presents the predicted values of the multilayer perceptron model as well as the levels of importance of the independent variables.

Table no. 5 Values of the multilayer perceptron model

Predictor		Predicted		Independent variable importance	
		Hidden Layer 1	output Layer	Importance	Normalized Importance
		H (1: 1)	Share evolution		
Input Layer	(Bias)	-0.366			
	DFI	0.827		0.334	71.7%
	DNI	0.431		0.200	42.9%
	TDI	0.760		0.466	100.0%
Hidden Layer 1	(Bias)		0.412		
	H (1: 1)		1.295		

Source: Developed by authors based on the collected data

Following the analysis of fig. no.1 and table no.5, it can be concluded that DFI influence significant on shares evolution, as DFI has a little influence, because the Romanian investors are not yet very interested in making investments based on sustainability and social responsibility reports. The influence of other exogenous variables (through bias) is

exerted on the hidden layer, such as interest groups, mass media. On the output layer represented by the evolution of the actions an important influence is exerted by the performance of the companies themselves (through the bias). Following the researches, we can say that the H2 hypothesis is partially validated, confirming the result of other researches, according to which the disclosure of information optimally can increase transparency by improving investor confidence, contributing to a higher value of the company (Allegrini and Greco, 2013).

Conclusions

Reporting activities and organizational behavior is essential for organizations providing reports and especially for those who use them. However, the activities of disclosure of FNFI differ in many respects. Financial reporting has a tradition, is subject to strict regulations and varies substantially from country to country. Non-financial reporting (in the field of sustainability) has developed in recent decades and includes a mix of information on economic, environmental and social performance, operates on a voluntary basis and there is a tendency for international harmonization of standards (Barbu, 2019).

The main purpose of the article was the comparative analysis of the ethics and the disclosure of the financial-accounting and NFI for a sample of companies listed on the BSE. We have built two qualitative indices, for an FNFI disclosure, as well as a total aggregate index. We used a multi-criteria quantification method that included within the criteria a series of qualitative sub-criteria according to which points were assigned subjectively following the analysis of the websites of the companies selected in the sample. By combining the existing classification methodologies, a new approach is presented which provides an excellent basis for comparative analysis of the quality of information disclosure by listed companies.

At the same time, in the article we presented the influences of the information disclosure indexes on the evolution of the value of the share of the companies as a result of improving the image and the reputation within the selected companies, thus proposing an instrument for quantifying the influences of the policies.

In the forthcoming work we will extend comparative research to companies listed in other capital markets from both developed and less developed countries.

Following the research, we concluded that the correct disclosure of information through the Internet could help corporations to stay in an increasingly turbulent business environment and to increase corporate value. Corporate governance should consider both the correct disclosure of mandatory financial information and the disclosure of NFI on a voluntary basis.

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VALUE MANAGEMENT PRINCIPLES' EXTENSION FOR SUPPLIERS, AS MAJOR COMPANY'S STAKEHOLDER

Mária Ďurišová¹, Dana Kušnírová² and Eva Malichová³

^{1) 2) 3)} University of Žilina in Žilina, Slovak Republic

E-mail: maria.durisova@fri.uniza.sk; E-mail: dana.kusnirova@fri.uniza.sk;

E-mail: eva.malichova@fri.uniza.sk

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Abstract

Maintaining or increasing the market competitiveness is crucial for the company's existence. The managers of the enterprises, who take this fact into the account are searching for new approaches and activities. One of them is building a long-term sustainable relationship with the stakeholders by providing them value. A comparative analysis of the theoretical material and case studies has led to the conclusion, that the suppliers as major stakeholders have a significant position in the value chain of the enterprise. The management is not aware of this fact and therefore pays a low level of attention to the management activities. The given grounds are the reason why the paper is focused on the suppliers. The aim of the paper is to point out that the application of the value management principles in the enterprise will create a long-term sustainable relationship with the suppliers. The relationship built this way benefits the enterprise as well as the supplier. It is important to synchronize the opinions of both parties and to achieve the balance between the needs met and the resources expended. The value creation should not be the result of the random processes and management decisions in the enterprises. Based on the synthesis of results by processing data obtained from structured interviews we propose a supplier creation value process. It consists of the value definition and description, its expression through the results measured by financial and non-financial indicators and the definition of management activities affecting the value creation for suppliers.

Keywords

Value, suppliers, value management, cooperation, competitiveness

JEL Classification

A12, M21, G32

Introduction

At the present stage of economic environment development, the problem is not the production of products, but their realization on the market. The value of the product for the customer must be greater than the value offered by competitors. The customer is one of the stakeholders of the enterprise together with owners, creditors, employees, suppliers, business partners, competitors, government, local government, nongovernmental organizations, pressure groups, communities and media. The profitability of the enterprise is directly dependent on all the above-mentioned stakeholders. This implies the need to include the value creation for stakeholders into the strategic management, through building a sustainable relationship (Garcia-Castro and Aguilera, 2015), (Gans and Ryall, 2017). The value provided by enterprise to the customer also influences the enterprise's relationship with the suppliers. According to Valaskova et al. (2018) the private labels and branding are important for customers in decision making and to fulfill their needs. It can be assumed, that the branding and private labels are important factors in the process of decision making also in case of suppliers. The supplier is a physical person or corporation who supplies an enterprise with material, energy, fixed assets and services for an agreed price, within an agreed time or deadlines. The specialized suppliers could be defined as a cluster, those suppliers are rivals on the same market (Havko et al., 2016). European Standard EN 1325-2014 Value Management emphasizes the need of value creation for all stakeholders of enterprise. It is necessary to manage the relations with them; however, the strategy can be focused on all stakeholders or only on selected groups (Kern and Gospel, 2020). In this case a stakeholder concentration index could be used (Obeng, 2019). Suppliers effectively contribute to achievement of the goal of value creation for customers. Supplier's willingness and readiness to innovate, bring the permanent product optimization to ensure and develop the competitiveness in terms of function, quality and price, and on the other hand to develop a lasting customer-oriented partnership. To ensure the competitiveness of the enterprises in domestic and global market, it is necessary to realize the value and importance of people in the process (Kucharcikova and Miciak, 2017). By creating value for suppliers, the enterprise builds a partnership and a beneficial relationship for both parties. The enterprise needs efficient, reliable, flexible and innovative suppliers. The established supplier-customer relationship is based on the value chain, coordination and location of value creation (Huemer, 2006). The supplier needs the enterprise as its buyer. The established lasting relationship is beneficial for both parties. Additional costs arise from the acquisition, addressing and creation of a supplying system of new suppliers. The enterprise builds lasting relationship with the suppliers in case, it has created value system for them, and the suppliers perceive the effect of this value system. The development of common action plans is important for regulation of the existing situation and for organization of common events focused on continuous improvement. Therefore, it is necessary to define and describe the value for the suppliers, express it in the results of measurement through financial and nonfinancial indicators and define the managerial activities, which have influence on the value creation for the suppliers. It is necessary to apply the principles of value management to suppliers as major stakeholders. Value management is a management style particularly dedicated to people, to motivate them, to develop their skills and promote synergies and innovation, with the aim of maximizing the overall performance of an enterprise (EN 1325-2014 Value Management). It is a process of managerial activities through approaches and methods used at various levels of value-oriented management in the enterprise. It focuses on linking new and existing knowledge. (Shephard and Egan, 2018)

Research Methodology

The paper focuses on linking the principles of value management with the value creation for suppliers. As a result of this linkage, the enterprise tracks the building of long-term sustainable relationship with the suppliers. This is possible only, if the supplier identifies the provision of value. The basis for achieving the goal was a comparative analysis of the data from the field of value management and value creation for stakeholders.

Further data were obtained from the structured interviews (Pen and paper interviews) with the competent managers of selected enterprises. According to the previous survey in these enterprises, they are engaged or interested in value management.

The chosen form of the research was based on the need to obtain information regarding the opinions, interests, attitudes, knowledge and preferences of the suppliers. They are the bases for the forthcoming questionnaire survey for small and medium-sized manufacturing enterprises in Slovak Republic. In the next phase of the research, the similar survey will be conducted in other European countries. The structured interview included closed questions for obtaining standardized answers and opened questions, as an opportunity to obtain unexpected data.

Results and Discussion

Based on the processing of primary data the three areas of results were created from the application of the principles of value management in enterprises for building a long-term sustainable relationship with suppliers.

The first area relates to a level of providing value and applying the principles of value management in business conditions. The questioned managers expressed their subjective opinion (low, insufficient, standard, average and good). Subsequently, they were given a verbal rating scale with numerical values of 1 to 10, which means the higher is the number, the higher is the level of value provision.

Table no. 1 The results of the demand for the application of the value management principles

Inquired data	Verbal rating scale									
	1	2	3	4	5	6	7	8	9	10
	Number of responses									
Level of value provision	0	2	3	2	5	5	0	3	0	0
Application of value management principles	0	3	5	4	5	3	0	0	0	0

The second part focuses on the types of provided values and their importance. The managers have expressed their opinion regarding what kind of value the suppliers are most interested in, to be provided to them by the enterprise. Afterwards they gave their opinion regarding the importance of the value types, provided by us through the verbal evaluation scale with numerical values of 1 to 10, which means the higher is the number, the higher is the level of value provision.

Table no. 2 The results of the types of value provided

The type of provided value	Importance									
	1	2	3	4	5	6	7	8	9	10
	Number of responses									
Payment of the invoices by the due date	0	2	3	2	5	5	0	3	0	0
Regular orders	0	0	0	0	4	3	8	1	2	2
Friendly relations between the business partners	0	0	0	0	3	4	6	3	2	2
Clarity of meeting the contractual terms and conditions	0	0	0	0	0	0	5	6	4	5
Adaptation training	0	1	2	3	5	4	2	1	1	1
Participation in development	0	0	0	2	4	5	3	3	2	1

The interviews revealed further needs of suppliers as follows: meeting the deadlines by the enterprise, its high flexibility, reliability and expertise in case of problem solving.

The third part contains the analysis based on the absence of providing the value for suppliers as major stakeholders. The managers expressed what kind of value is missing and to what extent it is perceived by the suppliers. The aim of the investigation, was to find the way in which managers detect the absence of values (by regular or occasional interview in person, questionnaire, intuitive way, making no effort etc.)

Table no. 3 The results of the absence of value provided

The type of provided value	The rate of the absence									
	1	2	3	4	5	6	7	8	9	10
	The number of responses									
Payment of the invoices by the due date	0	2	3	2	5	5	0	3	0	0
Regular orders	0	0	0	0	3	0	4	6	6	1
Friendly relations between the business partners	1	2	0	0	5	2	3	3	2	2
Clarity of meeting the contractual terms and conditions	0	2	2	2	3	2	3	3	2	1
Adaptation training	0	0	0	0	0	0	5	7	5	3
Participation in development	0	1	2	3	5	4	1	1	1	2

The benefit of using the method of structured interview was to obtain further significant information, which was not previously defined. These are in particular:

- the costs of building the sustainable relationship with suppliers are not monitored (no principle of relationship between the creation of the value and the resources spent on its creation is used),
- the building of such cooperation is time-consuming,
- competences and responsibilities are not strictly assigned,
- insufficient information due to missing records,
- absence of supplier management software,
- focus on the substance of the specific delivery and not on future deliveries.

The results of the research could be clearly expressed by a verbal-graphic model listed below (Figure 1 – Value creation process for the suppliers). It contains 3 steps – expressing the value, measuring the value and applying the managerial activities. All enterprises are trying to fulfill

the unlimited needs of human society, as the same of stakeholders, by using limited resources, therefore, their driving force and important goal is to achieve sustainable development. (Durisova et al., 2019)

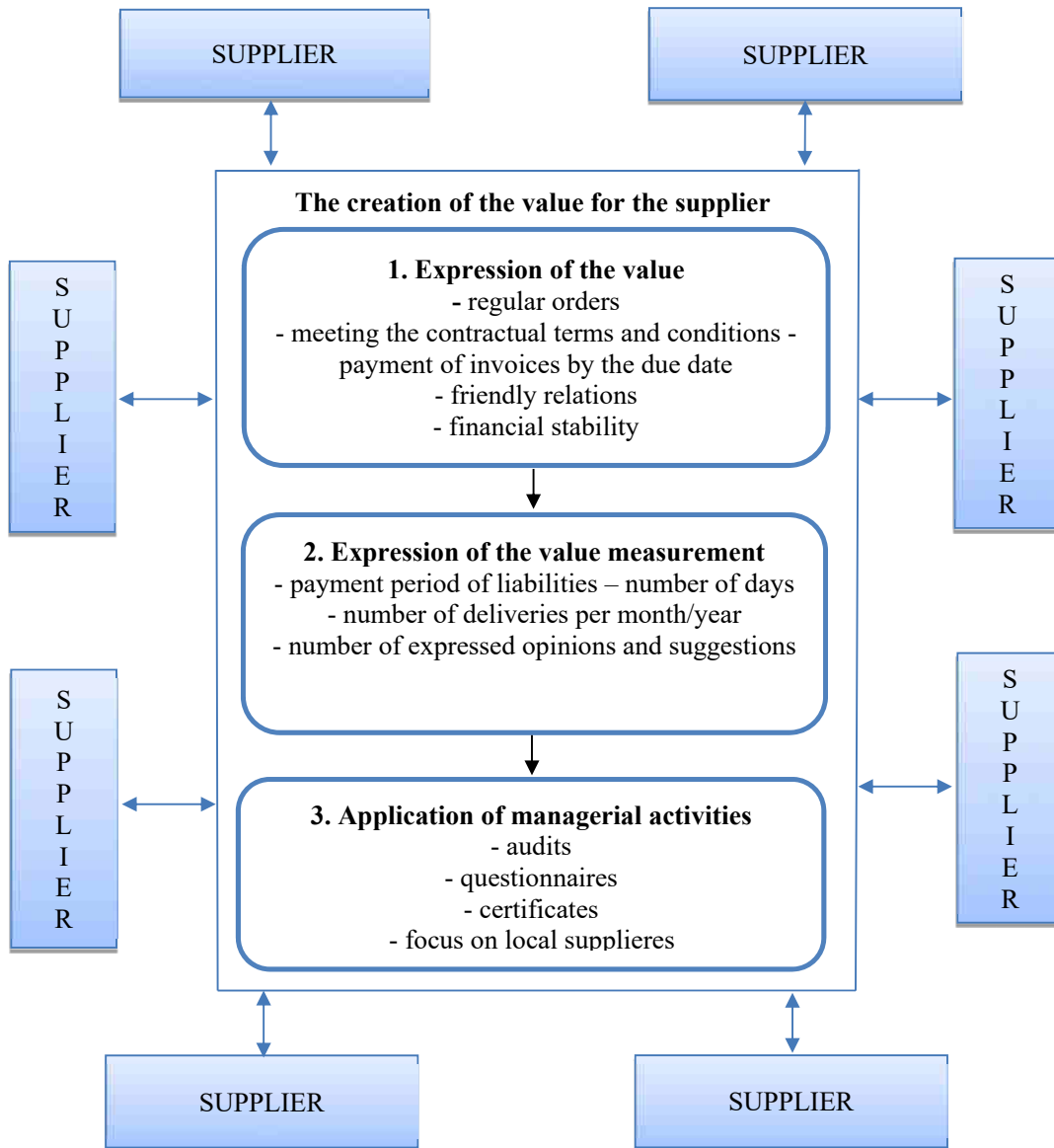


Fig. no. 1 Value creation process for the suppliers

Value management is based on the relationship between meeting the needs and the resources used to achieve them (Davies, 2016). The enterprise monitors the creation of the value for the supplier on one hand and on the other hand monitors the costs of its creation, especially material and labor. The product cost calculation is influenced by the pricing of suppliers, which requires transparent pricing. The application of the procedure is based on the pre-qualification of suppliers performed by using the commercial and technical evaluation. It is

followed by formal evaluation of important suppliers to monitor the continuous improvement. Continuous performance and product quality are monitored through formal evaluations. The defined procedures are used for dealing with disagreements in order of quick rectification. The quantification of the economic return on any investment to motivation is very difficult, as is based on difficult quantification of measurable benefits for the enterprise. (Hitka et al., 2017)

Conclusions

When doing business, every enterprise exposes to different types of risks, regardless of its business plan. (Tokarcikova et al., 2015). The enterprise builds the permanent (long-term) relationship with the key suppliers based on the cooperation. It expects creativity, the ability to innovate and on the other hand, provides a motivating system of cooperation. The enterprises should use the innovative methods in work with the people. The principles of value management could be applied in this area. Value management focuses on the knowledge and skills of the people, on promoting synergies and innovation. The aim of the paper is to show the effect of application of the value management principles in the enterprise on establishing a long-term sustainable relationship with the suppliers. The above stated aim was fulfilled by creating the value creation process for the supplier with an emphasis on quantitative expression. The enterprise provides value which is expressed by regular orders, meeting the contractual terms and conditions, payment of invoices by the due date, friendly relationships and measured through the payment period of liabilities (number of days), number of deliveries per month/year, number of expressed opinions and suggestions. The managerial activities of the enterprise are such as audits, questionnaires, certificates, focus on local suppliers, close cooperation in the area of product development, support of active development of the suppliers. This procedure is in line with the strategy of the enterprise. The enterprise demands the reliability, flexibility, creativity and innovation capabilities from the suppliers. The close cooperation between the enterprise and the supplier leads to achievement of their common goal which is maintaining the market position. The enterprise is competitive, and the sales of the supplier are ensured. We made the conclusion, that intensive cooperation with the suppliers should be applied through the whole value chain. Another conclusion, based on the empirical examination is, that the application of the value management principles is beneficial for both examined parties – enterprise and the suppliers. The suppliers deliver the products to the enterprise through the innovation, those products are subsequently processed by the enterprise and based on this process the added value could be provided to the customers. Our recommendation for the enterprises is to develop a system approach for the key suppliers. It is worth considering the use of information and communication technologies (ICT) in managing the suppliers. The structured interviews revealed the additional information regarding the low usage of ICT. This can be considered as an identified problem in the enterprise. The enterprises used to apply software solutions in the customer-oriented relationships. Furthermore, the use of ICT can determine the costs of building a sustainable relationship.

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THE RELATIONSHIP BETWEEN THE CEO CHARACTERISTICS AND THE FINANCIAL PERFORMANCE OF THE ROMANIAN BANKING SYSTEM

Mariana Bunea¹

¹⁾ The Bucharest University of Economic Studies, Romania

E-mail: maribunea@yahoo.com

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Abstract

The main objective of this article is to analyze a possible relationship between the characteristics of the people who hold the CEO position within the banks that operate in the Romanian banking system in Romania and their financial performance indicators. Regarding CEO characteristics, they are analyzed in terms of education, age, gender diversity and the origin country (the nationality).

The indicators regarding the banking financial performance that are used in the analysis are the return on assets (ROA) and the return on capital (ROE). Thus, the authors of this study tried to find answers to the question: Is there or not a relationship between the characteristics of the CEO and the performance of the Romanian banking? To answer this question, the authors used a predominantly quantitative methodology, based on a statistical deductive analysis, identification and testing of cause-effect interdependencies, while assessing the degree of significance of these connections.

Keywords

Profitability, solvency, banking system, CEO, gender diversity, performance.

JEL Classification

M40 , G20, G30

Introduction

The objective of this study is to analyze the possible influence of the CEO's characteristics of the operating banks in the Romanian banking system on their financial performance. Thus, within this article, a series of relevant results from previous research are taken over and developed from the perspective of two important areas: corporate governance and banking performance.

Amid recent global financial crisis, the weaknesses in the corporate governance of the banks have been the subject of intense political debate becoming the central point of extensive academic research (e.g., Pathan and Skully, 2010; Aebi et al., 2012; Pathan and Faff, 2013; Liang et al., 2013; Stulz, 2016; Farag and Mallin, 2017; Abou-El-Sood, 2017).

In this context, in the recent years issues related to the influence of executive presidents (CEOs) on the financial performance have become an extremely hot topic in the literature being approached from various perspectives (Garcia-Blandon, Argilés-Bosch and Ravenda, 2019). One of these perspectives addresses the influence of the characteristics of the CEO. Thus, in the specialized literature there are a number of approaches to CEO characteristics from the point of view of financial education (Mintzberg, 2004; Gottesman and Morey, 2015), age (Hambrick and Mason, 1984; Barker and Mueller, 2002; Belenzon et al., 2019), or nationality, respectively the origin country (Crossland and Hambrick, 2011; Ioannou and Serafeim, 2012; Boone, Lokshin, Guenter and Belderbos, 2019).

In terms of gender diversity in the context of corporate governance, this is a very important factor due to regulatory requirements. For example, in the United Kingdom, the idea of greater gender diversity on boards has been presented by Tyson Report (2003), emphasizing the role of women's presence in improving and improving organizational performance. At the same time, Carter et al. (2003) consider that gender diversity is one of the most pressing issues in the context of the large corporate governance. In their research, the authors argue that a higher presence of women on boards can have a decisive influence on their independence, as female representatives, unlike men, are less likely to be exposed to risks, being more critical and more analytical in terms of decisions taken in relationships with business partners and not least in terms of the company's development strategy.

Should CEO's financial education have any influence on the company's financial performance? Gottesman and Morey (2010) found three possible arguments in support of this influence: First, its cognitive ability is affected by the educational background, capacity that can influence performance; secondly, the behavior of the CEO is influenced by his education, behavior that again can have an impact on the performance; and thirdly, CEO credibility is affected by the educational background, with impact on performance.

Regarding the possible influence of CEO' age on the company's performance, Hambrick and Mason (1984), have shown in their research that there is a positive association between young managers and corporate growth. Moreover, senior managers tend to be more conservative, are less open to new (expansion and development projects) and are not willing to take risks (Barker and Mueller, 2002).

Regarding the CEO' nationality or the origin, this could influence the financial performance of the company in several aspects. Thus, Crossland and Hambrick (2011), appreciate that a number of nationality characteristics (the origin country), such as tolerance, individualism, preference for the preservation of property can be associated with that characteristic called the managerial discretion of the general manager. At the same time, the managerial discretion can determine the influence of the CEO on the financial performance of the company. The same idea is also highlighted in the studies of the authors Ioannou and Serafeim (2012) who conclude that the way of the managers training in their origin countries, such as the political environment and the education, work and cultural systems affect their(CEO) influence on the financial and social performances of the managed companies by they.

Thus, generally speaking, the CEO' nationality or the origin country can have an impact on the company's performances through: the political, educational, works and cultural systems (Ioannou and Serafeim, 2012); the managerial style acquired and created by the CEO (Culpan and Kucukemiroglu, 1993) and through the values acquired throughout the life in his origin country by the CEO (Ore, Bergson, and Diver, 2008).

Study on the impact of CEO characteristics on the financial performance of the Romanian banking system

1. The research hypotheses

The purpose of this study is to identify the relationships that may exist, on the one hand, between the characteristics of the persons holding the CEO position (chief executive officer) and the financial performance indicators ROE and ROA at the Romanian banking system. Thus, this article offers an exhaustive analysis of the Romanian banking system, trying to provide answers argued by the results of an empirical research to the question: Is there or not a connection and, if the answer is positive, how and with what intensity is this relation between CEO characteristics and financial performance indicators of the banks from the Romanian banking system?

Thus, based on the evidence from previous research found in the literature, the following hypotheses were formulated:

H1: There is a direct relationship between the CEO education and the banking financial performance?

H2: There is a direct relationship between the CEO age and the banking financial performance?

H3: There is a direct relationship between the CEO nationality (the origin country) and the banking financial performance?

H4: There is a direct relationship between the CEOs gender and the banking financial performance?

2. The research methodology

For the purpose of hypotheses testing, the used research methodology is predominantly quantitative, based on a deductive statistical analysis, which has as its starting point the agency theory. It aims to identify and test possible cause-effect connections, while analyzing their degree of significance.

The characteristics of the CEO are analyzed from the perspectives of education, age, gender diversity and the nationality of the respective country of origin. In the research conducted, the specific tools used were obtained through SPSS software under Windows (regression analysis and correlation tests).

At the end of 2018, the banking system in Romania included 33 banking companies, of which 26 were a number of banks - Romanian legal entities and 7 are branches of foreign banks.

Of the 33 credit institutions, 25 banks were included in the research sample, respectively Romanian legal entities, having published on their official websites the information related to the financial year 2018. The 7 branches of foreign banks were not included in the researched sample, because, according to the NBR Regulation no 25/30/2006 regarding the requirements for presenting information for credit institutions and investment firms, for them there is no obligation to publish information on the territory Romania (these are made public in the country of origin of the group to which the respective branch belongs).

The basis of this research formed exclusively information posted by the banks included in the sample analyzed websites official and those published by the National Bank of Romania or have been extracted from the transparency and disclosure reports of financial year 2018 created in accordance with the BNR regulations.

In order to achieve the objectives of this study, two types of distinct variables were defined, respectively: dependent variables and independent variables, analyzing the connection between them. The situation of the independent variables investigated, their definition and how they were determined is presented in detail in table no. 1.

Table no. 1 The situation regarding the independent variables

The independent variable	The used symbol	The Definition	The Determination
Gender diversity	CEO_Divg	the share of women in the total number of persons holding the CEO positions	number of women / total number of persons holding the CEO positions
Education	CEO_Educ	the share of CEO with financial training in the total number of CEO	CEO number with financial education / Total CEO number
Nationality	CEO_Nat	the share of CEO with Romanian nationality	CEO number with Romania as origin country/ Total CEO number
Age	CEO_Age	the effective age of the persons holding the CEO positions	the effective age of the persons holding the CEO positions

Source: author's own creation

Regarding the dependent variables under investigation, these are the indicators of Return on assets (ROA) and respectively Return on equity (ROE), indicators often used in the specialized literature. ROA - the return on assets is determined by reporting the net result to the total volume of the assets and ROE - the return on capital is calculated as the ratio between the net result and the total of the equity.

Testing the possible correlations between the independent variables and the dependent variable was performed by determining the Pearson coefficient, a commonly used coefficient for evaluating the correlation and the intensity of the linear dependence between two variables.

This coefficient can have values between "1" (in case a perfect direct relation is highlighted) and "-1" (indicating the non-existence of a linear direct relation between the analyzed variables). This analysis of the possible correlations that may exist between the two types of variables offers arguments about the meaning and significance of any links, in this way the research hypotheses formulated are rejected or accepted.

3. The research results and discussions

In this research, the study of each possible influence of the independent variables on the dependent variables is based on a series of results of a linear regression analysis (the multiple regression model under SPSS or the Backward method). For testing each hypothesis, the results are detailed described in the Annex 2 "Partial correlation matrix" and respectively 3 "ANOVA results", obtained through SPSS software).

Regarding the **H1** hypothesis testing: ***There is or is not a significant association between CEO education and financial performance of banks***, the results of the research regarding the influence of the independent variable on the dependent ones are detailed in Table no. 2a (Correlations) and Table no. 3a (ANOVA).

Table no. 2 a- Correlations

		CEO_EDUC	ROA	ROE
Pearson Correlation	CEO_EDUC	1.000	.149	.627
	ROA	.149	1.000	.898
	ROE	.227	.898	1.000
Sig. (1-tailed)	CEO_EDUC	.	.039	.009
	ROA	.239	.	.000
	ROE	.138	.000	.
N	CEO_EDUC	25	25	25
	ROA	25	25	25
	ROE	25	25	25

Source: the authors' own work using SPSS soft

Table no. 3a - ANOVA^a

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.064	2	.032	.788	.467 ^b
	Residual	.896	22	.041		
	Total	.960	24			
2	Regression	.049	1	.049	1.246	.276 ^c
	Residual	.911	23	.040		
	Total	.960	24			
3	Regression	.000	0	.000	.	. ^d
	Residual	.960	24	.040		
	Total	.960	24			

a. Dependent Variable: CEO_EDUC^b. Predictors: (Constant), ROE, ROA

c. Predictors: (Constant), ROE

Source: the authors' own work using SPSS soft

The table "Correlations" presents the Pearson correlation coefficients (Pearson Correlations), the significance value (Sig.) For each correlation coefficient and the number of cases considered in the study (N). Thus, it is observed that the value of the diagonal coefficients is equal to 1, because each variable is perfectly correlated with itself. It is found that the most significant link is between CEO education and ROE. Between the dependent variable CEO education and the independent variable ROE there is a direct, relatively significant link. The value of the Pearson correlation coefficient equals 0.627, with a value Sig. lower than 0.05. The same conclusion can be drawn from the ANOVA results, according to which the best predictor (the independent variable that best estimates the dependent variable) is the variable "ROE".

Thus, the research result indicates that there is a positive association between CEO education and indicator of return on equity (ROE) in the banking system in Romania.

Regarding the second hypothesis testing, respectively H2: **Whether or not there is a significant relationship between CEO age and financial performance of banks?**, the

results of the research regarding the influence of the independent variable on the dependent ones are detailed in Table no. 2b (Correlations) and Table no. 3b (ANOVA).

Table no2b - Correlations

		CEO_AGE	ROA	ROE
Pearson Correlation	CEO_AGE	1.000	.405	.432
	ROA	.405	1.000	.898
	ROE	.432	.898	1.000
Sig. (1-tailed)	CEO_AGE	.	.022	.016
	ROA	.022	.	.000
	ROE	.016	.000	.
N	CEO_AGE	25	25	25
	ROA	25	25	25
	ROE	25	25	25

c. Predictors: (Constant), ROE

Source: the authors' own work using SPSS soft

According to the results of testing this hypothesis, it can be observed that the Pearson correlation coefficient is close to the level of 0.500 with Sig values. slightly above 0.05 (0.22 and 0.16 respectively). However, according to the information presented in the ANOVA table, it can be found that the best predictor, the independent variable that can best estimate the dependent variable, but of low intensity can be considered the capital return (ROE).). Considering these results of the research we cannot say that there is a significant direct link between the CEO age and the financial performance indicators, through the prism of ROA and respectively ROE, at the level of the Romanian banking system.

Thus, regarding the testing of the second hypothesis, we can say that there is **a weak link between** the CEO age and the return on capital (ROE), without having a significant intensity.

Table no. 3 b- ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.114	2	.057	2.544	.101 ^b
	Residual	.493	22	.022		
	Total	.607	24			
2	Regression	.113	1	.113	5.269	.031 ^c
	Residual	.494	23	.021		
	Total	.607	24			

a. Dependent Variable: CEO_AGE b. Predictors: (Constant), ROE, ROA

Source: the authors' own work using SPSS soft

Regarding the testing of **H3 hypothesis: Is there or not a significant association between the nationality of the CEO (the origin country) and the financial banking performance?**, the results of the research regarding the independent variable influence on the dependent ones are detailed in the Table no. 2c (Correlations) and the Table no. 3c (ANOVA).

Table no. 2c - Correlations

		CEO_NATION	ROA	ROE
Pearson Correlation	CEO_NATION	1.000	.216	.159
	ROA	.216	1.000	.898
	ROE	.159	.898	1.000
Sig. (1-tailed)	CEO_NATION	.	.150	.225
	ROA	.150	.	.000
	ROE	.225	.000	.
N	CEO_NATION	25	25	25
	ROA	25	25	25
	ROE	25	25	25

Source: the authors' own work using SPSS soft

Given the obtained values of both the Pearson correlation coefficient and the significance of the F statistic, although according to the ANOVA test, it turns out that the best predictor is the return on capital (ROE) indicator, **we cannot accept the H3 hypothesis**, respectively that between the nationality (country of origin) of the CEO and indicators on financial performance at the level of the banking system in Romania there is a directly significant association.

The fourth and last of the hypotheses that have been the subject of this study is **H4: Whether or not there is a significant relationship between the gender of CEOs and the financial banking performance?**

Tabelul 3c-ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.327	2	.164	.617	.549 ^b
	Residual	5.833	22	.265		
	Total	6.160	24			
2	Regression	.287	1	.287	1.125	.300 ^c
	Residual	5.873	23	.255		
	Total	6.160	24			

a. Dependent Variable: CEO_NATION

b. Predictors: (Constant), ROE, ROA

c. Predictors: (Constant), ROA

Source: the authors' own work using SPSS soft

Regarding the acceptance or rejection of this hypothesis, considering, on the one hand, that out of the total of the 25 banks included in the studied sample, the CEO position is occupied by only one female representative as well as, on the other part, the results of the correlation tests, the values of the Pearson correlation coefficient in conjunction with the indicators in the ANOVA test, **the H4 hypothesis** regarding the existence of a significant direct correlation between the sex of the person occupying the position of CEO and the financial performance indicators at the level of the Romanian banking system **cannot be accepted, it is rejected**.

Conclusions

The main objective of this research was to analyze the potential connections between CEO characteristics (age, gender, education, nationality) and financial performance (ROA and

ROE) at the Romanian banking system level. Testing of the possible links between the boards of directors characteristics and implicitly the CEO and the financial performances has been the subject of extensive research so far. The similar results were recently obtained by the authors Garcia-Blandon et al (2019), who demonstrated in their research the connections between the CEO characteristics and the financial performance. The originality of this work is that it has tried to include these associations related to a field less subject to research, respectively the financial-banking field.

At the Romanian banking system level, this paper is the first research that attempts to capture the relationship between the CEO characteristics and the financial performance. However, the paper presents a series of limits generated, firstly, by the small number of banks included in the researched sample, the situation of banks operating in the Romanian banking system, having known a downward evolution in recent years. We appreciate that, with all these limitations, the present paper is a challenge for the future research in this field, being an important source of information and reflection for practitioners and not only.

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MARKETING DEVELOPMENTS IN THE SHARING ECONOMY

Mihai Constantin Răzvan Barbu¹, Cătălin Mihail Barbu² and Dragoș
Laurențiu Diaconescu³

^{1) 2) 3)} University of Craiova, Romania

E-mail: mihai_rc@yahoo.co.uk; E-mail: catarom@yahoo.com

E-mail: dragosdiaconescu31@yahoo.com

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Abstract

Sharing economy is a common presence in our lives. This new form of consumption started a decade ago, following the 2008-2009 crises, the development in mobile communication and a trend toward sustainable consumption exhibited by more and more people. Today sharing economy is widely debated in academic journals and popular press. In this paper we analyse the marketing of the sharing economy companies. Our goals are twofold: to identify particular marketing tools that explain the success of the sharing economy companies and to spot differences with the “conventional” marketing tools. The marketing within sharing economy context has its particularities concerning the marketing mix and relationships with the customers. Marketing is part of the transformation that led consumers to embrace the sharing economy. Among the marketing tools used in sharing economy we can mention: customization and product-as-a-service, dynamic pricing mechanism, interactive communication on digital environment, multichannel customer interactions, rethinking of the consumer participation in company-customer relationship.

Keywords

Marketing tools, sharing economy, marketing strategy, consumer behaviour

JEL Classification

M30, M31

Introduction

In recent years, a whole new and different businesses have emerged. What their business models have in common is that they operate in sharing economy or collaborative consumption, in which people offer and share unused resources in a creative way. For example, Airbnb allows people to rent some or all of their homes for short stays, and Uber allows real-time access to a means of transportation, using an application that locates the driver and car on the ground. The collective consumption, often associated with the sharing economy, is realized in organized systems or networks, in which the participants carry out

sharing activities in the form of renting, lending, trading, exchanging goods, services, transportation solutions, space-rentals or money-exchanges (Möhlmann, 2015). A paradigm shift that occurs in sharing economy is the transfer from ownership to access and optimization of the consumption. As a consequence, a product or service is accessed only when it is needed, as opposed to traditional forms of business where, in general, to consume you have to own the product. Sharing economy has created stress in some traditional industries such as taxi and hotels, but other traditional sectors can be at risk of being disrupted by the sharing economy: the auto industry, the restaurant and public catering sector, the labour market, etc. Therefore, traditional companies have sought to adapt part of their market offerings to make it attractive to sharing economy consumers. In line with the modification of the offer, the marketing mix, both that of the traditional companies and those active in the sharing economy, is modified accordingly. The objectives of the paper are to analyse how marketing is performed under the conditions of the sharing economy and how marketing in the sharing economy is different from the mainstream of marketing tools.

Changes brought by sharing economy. Particularities of the sharing economy

Sundararajan (2016) defines the sharing economy as mass capitalism, because there is a transfer from ownership to on-demand-access. The sharing economy can be described as having three central cores: access to resources and poorly used assets; community support through non-monetary interactions and intermediate and decentralized exchanges through specialized platforms (Acquier et al., 2017). Within sharing economy, consumers offer each other access to under-utilized assets for financial or non-financial compensation (Frenken and Schor, 2017).

The existing literature has provided a variety of definitions for the sharing economy. We consider that some of these definitions overlap with other contexts that are not related to the basic and core elements of this new disruptive innovation. Specifically, when we talk about the sharing economy, we consider three elements: a platform or a service enabler, the traditional consumers, and the suppliers which can be also the same consumers (prosumers). Therefore sharing economy displays three parties and a series of relationships and interdependencies, and the shift from ownership to access-based consumption (figure no. 1).

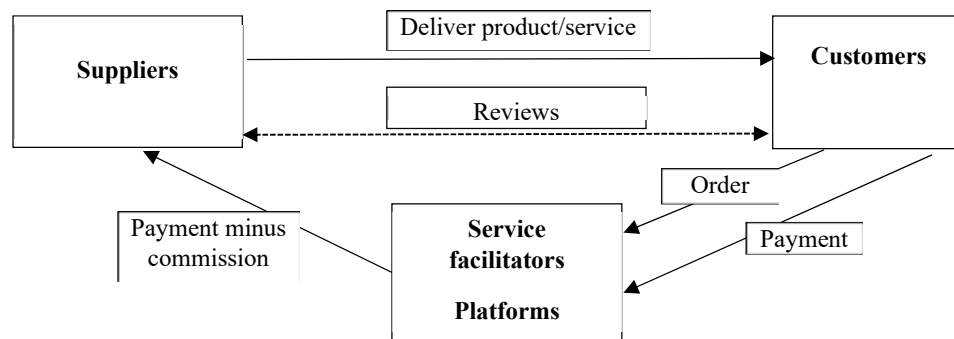


Fig. no. 1 The business model of the sharing economy

Source: adapted after Kumar, V., Lahiri, A. and Dogan, O.B., 2018. A strategic framework for a profitable business model in the sharing economy. *Industrial Marketing Management*, 69, pp. 147–160.

The sharing economy works by short-term rental of a particular service (for example, transportation for Uber, accommodation for Airbnb). Sharing economy is based on technology and interactivity (Sutherland and Jarrahi, 2018). The defining element of the

sharing economy is a platform, usually digital, that connects suppliers and consumers (Kumar et al., 2018). In this way, traditional suppliers are replaced by many small suppliers. The attractiveness of customer platforms lies in the fact that they can quickly find an answer to a specific need. The digital platforms program and the supplier-consumer interactions are usually carried out 24/24 hours. The platforms use digital technologies to outsource most of the production activities to people who interact in a peer-to-peer manner and to ensure and control remote transactions.

Sharing economy has a number of characteristics that distinguish it from the traditional economy: it is oriented towards access rather than property, it generates economic exchanges, it is based on a platform that mediates trade, consumers are also suppliers - the so called prosumers (Eckhardt et al., 2019).

Sharing is a pro-social behaviour and its roots can be found in early history. Modern times seen a revival of sharing practices due to a variety of reasons: economic crises, a more sustainable consumer practices, the need for social interactions in traditional settlements, etc. Social sharing and sharing in general are becoming a distinctive mean to deliver valuable results (Benkler, 2004). Sharing is in general performed outside the traditional markets and can be conceptualized as a new form of production and value creation based on social interaction. The outcome is that collaborative consumption is more and more present and the sharing does no resume to tangible assets but also to nonmaterial one: skills, space, time and money (Botsman and Rogers 2010).

Sharing and the use of products by multiple users allows for more intensive use of products, offering a better leverage for the allocation of resources and capital. In addition, as the producers remain the owners of the goods, they are responsible for environmental externalities, and are stimulated to invest in the design of environmentally friendly and sustainable products.

Research methodology

The difficulty in writing a conceptual paper is to have a clear distinction between the theory that frames an analysis and the theory that provide the data. In our research design we use the Jaakkola (2020) approach and we provide a typology of marketing tools deployed in sharing economy. To achieve this we bring together findings from scatter pieces of research into distinctive categories. The results is a reduction of complexity and a focus on essential matters.

The marketing mix in the sharing economy

Consumer preferences and consumption patterns change in the sharing economy. Therefore the marketing mix must take into account these changes. In the sharing economy, marketing will support more interactions between the company and consumers, and consumers will have a greater involvement in the conduct of marketing campaigns (Achrol and Kotler, 1999). Marketing will prescribe less predefined recipes from the companies' sides and will seek to listen and to involve consumers in the design production and consumption of products. Companies will work together with consumers to integrate these products into consumer's lifestyle. Throughout the paper we will focus on the marketing of service facilitators as they are the promoters of the sharing economy. Service facilitators, being in charge of a platform, have the challenging task to find both consumers and suppliers. Basically they operate a market and they must ensure that both the offer and the demand are present at a satisfactory level.

Product policy

Regarding the product policy there are a couple of particularities that facilitated the developments of the sharing economy: digitalization, customization, product-as-a-service, instant match-making, incipient branding.

At present, traditional products are augmented by offering a substantial *digital component* (e.g. cars, telephones, appliances, utility services, tourist services, public services), which will contribute to increased interactions and personalize the offer (Kannan and Li, 2017). Sharing economy platforms are fully profiting from the digitalization of the offer of products and services. The vast majority of these products within the sharing economy are offered through digital applications using mobile phones. Digitalization allows the *customization* of the offer to a greater extent which contributes to the creation of tailored products to consumer needs. The concept behind this personalized mass-production, namely the production of goods that meet the clear specifications of the client, is an old one, but the emergence of technology in the digital age allows companies to offer personalized products, on an unprecedented scale. Through the Internet, consumers can express their preferences directly to the producer or service-provider who, using a sophisticated production-line but with defined modules, can assemble the product/service at a price comparable to that of a non-personalized item. Custom mass production is not restricted to products alone. Many sharing economy companies, develop particular customer services and try to improve the customer experience through more options, including on-line support and personalized assistance.

Product-as-a-service is a strategy that enable consumers to access only a “slice” of the product, which is necessary for the present consumption. Also known as *servitization*, this strategy consists in selling solutions to specific needs rather than products. This strategy increases the access to certain products and services, reduces waste, allows the consumers to approach the product instantly and not only after they have saved enough money to afford the product. For companies the advantages include: optimized cash-flow, better customization, increased relationships with consumers. For example BMW and Mercedes offer both cars sharing by the minute on their common platform ShareNow.

The characteristic of sharing economy is the possibility that the meeting between the demand and the offer can be realized in a dynamic way, the so-called *real time match-making*. This is accomplished through algorithms and the active search process. Whereas in the traditional economy the meeting between demand and supply takes place when one of the parties initiates the contact or the move to the other side, in the sharing economy the suppliers and the consumers look for each other. This increases the speed of transactions. The implications for companies are colossal: the offer does not have to be static anymore, but the search for customers must be carried out continuously. This also implies that the offer must be available almost non-stop.

Concerning the *branding and reputation* in the sharing economy, these issues interest not only the service facilitators but also the suppliers. Whether the suppliers improve their notoriety through the rating service, for the platforms the branding principles apply. Innovative platforms, usually those who invented the service benefit from the greatest awareness, in spite of growing competition. Being the first on the market, the big names of sharing economy can leverage on their notoriety such as to maintain competitive advantage, to diminish perceived risks, to continue to innovate Florea (2015). Sharing economy brands are less likely to form communities around them due to the lack of ownership but this does not mean that they are less valuable than the brands of tangible products (Bardhi and Eckhardt, 2012).

Sharing economy and pricing policy

Using sophisticated algorithms many sharing economy companies use a process called *dynamic price setting*. The price is changing at very fast pace in accordance with the variation in the factors of offer and demand. This allows for a better capture of the market value. In

cases of congestion and over-demand, finding a service or product is no longer a matter of chance and proximity, but rather the customers are selected to match the existing capacity. While the dynamic price setting mechanism has obvious advantages, in times with low demand prices can be set too low to ensure an adequate profit of suppliers. As of today many companies used to display systems that resemble the dynamic pricing, so that the scale of this marketing technique is now at full display. The question that arises is if the dynamic pricing model can be used as a marketing tool and not only as an optimal resources allocation mechanism. That is can the price be used to signal the brand quality or prestige? At first, consumers in the sharing economy tend to be price conscious, but in time, the notoriety of the sharing economy companies become so large that some of them can charge a premium for their brand.

Alternative compensation mechanisms are used in other companies of sharing economy. Clients can access one product for points or stars. In order to get this points jobs can be performed (you pay in time or tasks) or they can be bought with money. In the sharing economy, platforms have a centralized pricing mechanism (for example Uber). They are responsible for price-setting. Suppliers and producers need to take these prices for granted. This fact can create some discontent. In other platforms (Airbnb) suppliers have the possibility to set their own prices. The question is what mechanism is best for optimal allocation of resources. It is clear that platform owners have more information and access to data than the prosumers.

Communication and promotion

Since the first adopters of the sharing economy used to be young people (Cheng, 2014), communication with them was done mostly on digital channels. Consumers inform themselves from the reviews and are asked and encouraged to contribute to this reviews. This adds to the credibility of the communication as it is user-generated. Sharing economy platforms benefit from real time-communication originating from consumers and this boost their reputation and credibility. User-generated content and online reviews (online word of mouth) are a massive source of information that platforms can rely upon to inform and to persuade consumers (Kannan and Li, 2017). Traditional mediums of communication such as television are in part avoided, since the target public is not present on these classic mediums. As in any form of business, in sharing economy too, the success of communication is based on the identification of all contact points between the platform and the consumers, identification of those channels that are less crowded and where the attention of the public can be closed to maximum, and delivering a message relevant to consumers. Digital communication fulfil its full potential on sharing economy platforms: social media advertising, video content, application advertisement. Much of communication is and will be devoted to mobile environment since the mobile is an indispensable gadget to consumers.

Distribution policy

Mobile communication allows us to share and to access products and services from all over the globe. A series of companies use geo-localization for instant match-making between suppliers and consumers. This has raised concerns over privacy and intrusion into intimacy. Online customers can be easily managed in the way that, eventually, their socio-demographic profile can be traced. A large volume of data is available for interpretation and synthetization into valuable information. In online environment the measurement of client's acquisition and tracing their journey with the company environment is much easier to be implemented (Verhoef et al., 2015).

Customer relationship management and trust building

Every successful business needs clients to buy its products and thus to validate its business model. Consumers embarked on the sharing economy for a variety of reasons. Sharing economy provided immediate access and ease of use, this being relevant especially for young people Möhlmann (2015). Trust is cited among the main drivers of the sharing economy. Because of the review system customers and suppliers trust each other on the journey of sharing (Botsman and Rogers, 2010; Sundararajan, 2019). Trust and ease of use are facilitated by technology. Internet and mobile applications are a great medium to access sharing economy products and services, just by logging with your social media account. With the help of technology consumers are more and more involved in two-way interactions with companies and other consumers (Foltean et al., 2019). Consumers want to know that apps are safe in terms of data protection and that their transactions are secured.

People engage in sharing economy both as suppliers and consumers, and the reasons they do it are not just for material or functional benefits but also for the social value of connecting with the others. This social value is beneficial for platforms too as it leads to consumer loyalty. The fact that consumers can experience also the “production” side can help them to understand how a platform works and to be more satisfied with sharing economy. A number of authors suggested that consumers are increasingly conscious about ecological matter and they modify their behaviour accordingly (Sitnikov and Bocean, 2013; Dabija and Pop, 2016; Popescu et al., 2018). A series of studies described the relationship between sharing and sustainable development in all dimensions: ecological, social and economic (Plewnia and Guenther, 2018). Sharing economy companies include in their statements ecological concerns that might be relevant for certain consumers (Bocean et al., 2018).

Table no. 1 Marketing in the sharing economy vs. marketing in “traditional” economy

Policy tool	Marketing in the sharing economy	Marketing in “traditional” economy”
Product policy	Preponderant use of digital marketing	Preponderant use of conventional marketing
	Customization of offer	Invariance of offer
	Product-as-a-service strategy	Products are sold with ownership rights
	Real time match-making	There is a delay between production and consumption
	Incipient branding	Mass branding
Price policy	Dynamic pricing mechanism	Prices are set in accordance with three factors: costs, demand and competition
	Alternative compensation mechanisms	Money is the only mean of exchange
	Centralised pricing	Decentralised pricing
Communication	Interactive, decentralised communication	One-way, centralized communication
	Intensive, controllable word-of-mouth	Dispersed, non-controllable word-of-mouth
	Efficient measurement of return of investments of advertising	Inadequate assessment of the outcomes of advertising
Distribution	Managing customer experience on digital environment	Managing customer experience on classic retail formats
	Revitalization of the existing stock of assets	Adding up to the stock of used assets

Customer relationship management	Trust is instituted by peer-reviews	Trust is based on product quality and invested by official recognition from certified bodies
	Consumer participation is motivated by economic and social interests	Consumption is motivated mainly by economic factors
	Ecological and sustainable aspects of the businesses are of interest to consumers	Consumers are not so concerned about sustainability

Source: Developed by the authors

Conclusions

Sharing economy is a phenomenon that is ever present in our daily life. A growing number of consumers will adhere to sharing economy principles. Traditional companies have to adapt their marketing mix or they will be outdated by new developments. Although sharing economy and the traditional economy will continue to coexist, there will be moments of overlap in which consumers will be interested in accessing the offer that brings them the most value. The marketing strategy will continue to be focused on value creation for customers, as this will depend on the well-being of the company. By developing offers that include technological platforms and greater interaction between the company and consumers, businesses will be even more customer-centric and meeting the needs of the market, which will lead to increased customer satisfaction. We noticed that the marketing strategy of sharing economy companies include access to products and services through technology, and this trend will continue. Consequently, marketing must follow the same digital channels. Those processes that can be automated will lead to cost reduction and standardization of customer interaction. The role of artificial intelligence and virtual reality is not to be neglected. In the end, companies will have to address in their future marketing campaigns the topics that resonate with consumers and which drove them to sharing economy: ecology, reducing waste, avoiding high expenses. In this way, customer engagement can be achieved: by combining the technology with the themes that are relevant to the consumer, at the same time with increasing the value for the consumer.

We consider that, rather than prescribing the new modes of consumption of the sharing economy to consumers, marketing of companies should focus on identifying new consumer preferences and creating value offers in accordance with these new principles of consumers. In the true "shared process" companies and consumers should work not only to develop new products and services but also to create marketing techniques that are relevant and enhance value for both parties.

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INITIAL THOUGHTS ON THE IMPACT OF ROBOTIC PROCESS AUTOMATION ON THE ACCOUNTING DEPARTMENT

Valentin-Florentin Dumitru¹ and Simona Marilena Stănculescu²

^{1) 2)} The Bucharest University of Economic Studies, Romania

E-mail: valentin.dumitru@cig.ase.ro

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Abstract

Robots represent a new technology used in all the departments, including accounting. So far, the number of literature contributions in the area is very limited. In this paper we explore the new concept. We synthesize the advantages and disadvantages of this technique, we review the academic literature in the area and we launch some future research avenues. The contributions of our work relies on the conceptualization of the phases necessary in the implementation of the robotic process automation, the benefits obtained and the difficulties encountered when using robotic process automation.

Keywords

Robotic process automation, accounting department, academic literature, professional reports.

JEL Classification

M14

Introduction

Started once as a need to record the “wealth”, accounting underwent a long process of change. Only a decade ago one had to prepare all the statements for the state on paper and wait in long lines to hand them over to the state authorities. The questions asked nowadays are: “Are the robots going to replace the accountants?”, “Is the accounting as a job going to disappear?” Beginning in 1922 with Henry Ford’s production lines, the automation process touches today all the departments of the business, including accounting in all its forms (management accounting, financial accounting, auditing etc.). Adopted by the big accounting and auditing companies, the robotic process automation (RPA) was little studied in the academic literature so far. Its importance is given by the fact that the right software can have a significant impact on the performance of the entity (Devarajan, 2018).

In this paper we explore the new concept and its impact on the accounting department. We synthesize the advantages and disadvantages of this technique, we review the academic

literature in the area and we launch some future research avenues. We use in our study academic papers and, also, reports issued by ACCA and the Big Four companies.

What is a robot and what does it do?

The technology for robots in finance and accounting existed since the 1990s. Back then, the IT department used macros (in Excel) for some activities, but the technology “was fallible” (ACCA, 2015). They were first used in businesses in the customer relations departments and in the production. Flexible manufacturing system meant the viable economical production of medium-size quantities. As such, it impacted management accounting (Dilts and Russell, 1985). For instance, the cost method changed. The variable cost included only the materials cost, as the labor was fixed. The absorption basis was no longer the labor hours or direct labor. The system collected information on machine hours, which becomes the base for product costing. The overheads increased. The need to control the costs and production mix appeared. The robots had implications on quality cost and decision making processes.

RPA was defined by IEEE Corporate Advisory Group (2017) as “A preconfigured software instance that uses business rules and predefined activity choreography to complete the autonomous execution of a combination of processes, activities, transactions, and tasks in one or more unrelated software systems to deliver a result or service with human exception management.”

According to ACCA (2015) “Robotics is the application of flexible tools to automate manual activity for the delivery of business processes or IT services.”

RPA is connected with the rest of the IT system which exists in the entity, using the other applications (such as Excel, e-mail, ERP, CRM, HR). It is a transversal technique, rather than being isolated at the level of one department (Hofmann et al., 2019). RPA is an intermediate between business process automation and people (Van der Aalst et al., 2018). A robot is a software which can do repetitive works such as monthly accounts closure, consolidation, reporting, payroll, accounts payable, accounts receivable, payments and other cash transactions, invoicing, which are traditionally performed by employees. It can have a user and a password assigned, just like any employee. It logs on to the system, performs its job and logs out when finishing. A process which can be performed by a robot has to have a few characteristics, as we present in Table no. 1.

Research method

The purpose of our paper is to review the literature regarding the robots created for the accounting department. We use in our studies academic papers and, also, reports issued by ACCA and the Big Four companies. We first conducted a systematic review of the literature on ProQuest databases. We used the terms “accounting,” “robots,” “robotic process automation.” We added articles downloaded from Google Scholar to our database. We searched for reports issued by Big Four companies, ACCA and other professional organisations on Google.

The research questions are:

RQ1: Which are the outcomes, advantages and disadvantages of the robots implementation?

RQ2: Which are the main characteristics (theoretical frameworks, theories, methods, themes) of robots in accounting research?

Table no. 1 Characteristics of the processes suitable for RPA

Authors	Characteristic	Explanation/examples
Hofmann et al., 2019; Lacity et al., 2015; Moffitt et al., 2018	Highly standardized, well-defined, rule- based process	Invoices preparation
Lacity et al., 2015; Moffitt et al., 2018	Mature processes	
Lacity et al., 2015	Simple processes, which are completed in a few minutes	Exchange price differences
Lacity et al., 2015	Processes with identifiable beginnings and endings	
Hofmann et al., 2019	Multiple system access	The robot logs to a system (e.g. ERP, CRM), takes some data, searches for them in another database (e.g. ANAF) and updates the data from the first system.
Lacity et al., 2015	High levels of process interoperability across many platforms	
	Repetitive	Processes that are iterative are good candidates. Automation speeds up the execution of those processes resulting in increased productivity.
	Rules-based	If the way of handling a specific process does not undergo significant changes with each iteration, it can easily be translated into a set of rules that can be followed by RPA robots. A rules-based process is a good candidate for automation
	Structured	Are the aspects of the process well-defined or structured? If yes, the process's automation is easy to perform.
	Low Exceptions	

Source: Authors' compilation

Results of the study

RQ1: Which are the outcomes, advantages and disadvantages of the robots implementation

The outcomes of RPA appear at the level of the individuals and entity. From the point of view of the *outcomes*, the robots bring a technological process reframing (Issa et al., 2016), new process landscape (Hofmann et al., 2019) and workforce replacement (Frey and Osborne, 2017).

Technological process reframing (TPR) is “the reconsideration of methods and processes on an area of endeavor consequent of the advent of a disruptive technology” (Issa et al. 2016). In order to achieve it proactive planning and support from management and IT are needed (Lacity & Willcocks, 2015)

The workforce replacement doesn’t mean necessarily that the people will be fired, but their roles and tasks will be different (IRPA, 2014). It means that the people will have to acquire appropriate skills (Lacity & Willcocks, 2015) in order to do the work that a robot can’t do. The accountants will have to have communication, technical, IT and leader abilities, creativity, critical thinking and the capacity to solve problems (Ticoi, 2019; Jędrzejka, 2019). If they are to be accepted by companies, the robots have to replace first the humans in the tasks that they do not like; thus, they will be seen as a help rather than a threat (James Hall, Genfour, ACCA, 2015).

Research shows, however, that the use of RPA leads to a reduction of workforce (Lacity & Willcocks, 2015; Fernandez & Aman, 2018). The reduction can be obtained by not hiring more employees after adopting RPA (Chappell, 2017), which means that there is a lower number of job opportunities. As an outcome, RPA generates fear for the employees (Smith & Anderson, 2014).

RPA should be used by companies with an operational excellence strategy (Hofmann et al., 2019).

In terms of *benefits*, robots are non-invasive (Devarajan, 2018) and come to complete the ERP systems and outsourcing. However, they are a lot cheaper (Jędrzejka, 2019) and agile. Robots are simple, quickly and easy-to-implement and reconfigure, even by non-IT persons, adaptable (Hofmann et al., 2019). Robots work with virtually any existing desktop or server software (Moffitt et al., 2018).

They bring a reduction in human error, increased productivity, increased security, reliability, improved quality and reports, while decreasing delivery time (Lacity & Willcocks, 2015; Lacity et al., 2015; Hindle et al., 2018; Hofmann et al., 2019; Jędrzejka, 2019). The error tends towards zero. RPA assures geographical and cultural independence (Jędrzejka, 2019). The robot keeps track of all the transactions it performs. The data is logged and audited instantly, minimizing the compliance risk and improving the control (Lacity et al., 2015; Hindle et al., 2018; Jędrzejka, 2019).

“Robots work twice as fast as a person and don’t stop” (Deloitte’s Peter Moller, ACCA, 2015). This generates a reduction in time used to perform a certain task and, ultimately, to deliver the service (Jędrzejka, 2019). The robots can work at any time (Kanellou & Spathis 2013). They log in, do the job and log out when finishing.

RPA can have a positive impact on the work of people. People won’t perform repetitive tasks anymore and will have time for more challenging activities (Lacity & Willcocks, 2015; Jędrzejka, 2019). This improves the motivation and satisfaction of the employees.

For instance, in Romania at this point robots are being used by accounting firms to decrease the number of hours spent on repetitive activities, such as: the process of submitting the periodical tax returns (generating the tax returns from the accounting software, signing them using a digital certificate, submission on the designated website, verifying the message received during loading, sending the tax return to each client). Furthermore, robots are being used also for providing more flexibility to accountants, making work possible from any place.

For example, you can send a message via WhatsApp to a robot from your computer to send an email to your client with the trial balance that the robot has generated from the accounting software.

In conclusion, the benefits identified in relation with the RPA implementation can be synthesized as it follows:

- Economic benefits: e.g. increased ROI, improved total business value;
- Technical benefits: e.g. increased process automation;
- Organizational benefits: e.g. greater service quality;
- Social benefits: e.g. improved motivation and satisfaction of employees.

One of the *disadvantages* of the robots is that they cannot deal with the exceptions. Yet, the exceptions can be managed by the employees who, ideally, interact with the robots (Van der Aalst et al., 2018).

It takes a lot of time to “teach” them what they have to do, as they need more explanations than humans. If the rules do not cover all the aspects which can be encountered in a process, the RPA will make mistakes.

The RPA depends on the company’s IT infrastructure. Unattended robots have to be supported by servers, software and network which keeps the pace with the robots, otherwise they won’t be used at their full capacity. Yet others robots can be installed on computers and work with the employees.

The robots bring the disadvantages inherent to the new things: nobody wants to implement them, to invest in them before knowing that they work. As such, they will only be used at large before a big company will decide to use them and find that they work. “A try then buy” selling approach may be a solution (ACCA, 2015). The vendor will have to explain clearly the processes affected and the benefits of the solution. The robots are not considered a robot, but a technique.

Another issue in the beginning will be to trust the work of the robot.

Sometimes, the implementation is not well documented. As it is considered simple, it is sometimes performed by persons with no IT background and is not integrated with the rest of the company’s software. As a consequence, 30-50% of the RPA projects fail (Hindle et al., 2018). Ideally, the project should be well-defined and the involvement of the IT department should be in line with the complexity of the work. Yet, RPA redesigns the traditional relationship between IT and other departments, as RPA should be implemented according to the instructions given by the implementing department.

The adoption of RPA can have negative emotional consequences on the employees (Fernandez & Aman, 2018). It creates competition between robots and people (Fernandez & Aman, 2018; Jędrzejka, 2019).

In conclusion, the difficulties identified in relation with the RPA implementation can be classified as it follows:

- Economic difficulties: e.g. cost overrun;
- Technical difficulties: e.g. tool selection; project time; implementation process; training; fit with the IT infrastructure; customization; security;
- Organizational difficulties: e.g. business process change; strategy;
- Social difficulties: e.g., they will need new skills in order to work with the robots; resistance to change; relationship with the solution providers.

RQ2: Which are the main characteristics (theoretical frameworks, theories, methods, themes) in robots in accounting research?

RPA in auditing was explored by Moffitt et al. (2018). The robots can be used for audit tasks as reconciliation, analytical procedures, internal control testing, detail testing. There are already specialised tools, such as IDEA, UiPath etc.

Another study dedicated to the implementation of RPA in various domains was published by Devarajan (2018). It presents the processes in which the RPA can be used in audit, insurance, retail and manufacturing.

Fernandez and Aman (2018) use a theoretical framework to document the impact on individual and on organization. They use the institutional theory and interviews in their work. They find that the people appreciate the accuracy brought by the implementation of RPA, consider that employees' time can be used for more challenging tasks. They reject the idea of the RPA use and the work processes changes because they are afraid that they will lose their jobs. All the problems have solutions at the level of the organizations. They can be solved with proper planning and communication. The RPA brings time and cost savings.

Collecting data from academics, researchers and professionals using a questionnaire, Abhishek and Divyashree (2019) discuss the benefits and the awareness level of the use of RPA. They find the accuracy, elimination of repetitive tasks, easier compliance with legal requirements, matching accounts with third parties among the benefits of implementing RPA. Hofmann et al. (2019) identify as a gap in the literature the lack of "a theoretical and synoptic analysis of RPA." They characterize the RPA and provide a set of directions for future research.

Lacity et al. (2015) present the successful implementation of a RPA (Blue Prism) at Telefonica, which started in 2010. The improvement started with the elimination of the non-value added processes, simplification and optimization of others. The implementation of RPA started with two simple processes, which supposed high volume of work. The trial lasted for two weeks and it was a success. The first negative reactions in respect of the RPA were generated by the IT department. Its employees felt threatened because the robot executed a lot of tasks in a very short period of time. In the beginning, the implementation team was made up of two back-office employees of Telefonica and one employee from the RPA provider. The employees received a week training and the consultant from Blue Prism worked for about one month at Telefonica. In 12 weeks the two employees could work independently. They began with 20 robots and increased to 75. Another employee joined the RPA team. In about five years, 15 core processes were automated, represented 35% of the back office transactions. Hundreds of people were redeployed to other departments.

Conclusions

Robots in accounting represent a new phenomenon. "Taking the robot out of the human" (Blue Prism, 2017), the general idea is that RPA won't replace people, but people will dedicate their time to complex, non-repetitive aspects which cannot be solved by robots.

The contributions of our work relies on the conceptualization of the phases necessary in the implementation of the RPA, the benefits obtained and the difficulties encountered when using RPA. This is the first paper to our knowledge, which deals with these three issues. We compared them with the ones generated by the implementation of the ERP systems.

After searching for references, we found out that the academic literature in the domain is scarce. There is a need for works in this domain because the depth of the research can inform on various aspects, such as:

- RPA in practice;
- RPA in specific accounting domains;
- Is RPA compatible with any legislative regime?
- RPA and other software (such as ERP systems)
- RPA and electronic markets
- The impact of RPA implementation on the accounting education

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THE IMPROVEMENT OF MANAGEMENT ACCOUNTING AND CALCULATION METHODS IN TOURISM AND PUBLIC ALIMENTATION ACTIVITY

Eugeniu Țurlea¹, Luminița-Georgiana Achim² and Ioan-Codruț Țurlea³

¹⁾²⁾³⁾ The Bucharest University of Economic Studies, Romania

E-mail: eugeniu.turlea@cig.ase.ro; E-mail: luminita.achim28@gmail.com;

E-mail: turleacodrut@gmail.com

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Abstract

The traditional methods of costs calculation no longer meet the actual requirements of economic entities management regarding the informational necessities. If we refer at tourism and public alimentation activity, a sector in permanent development, to resist in front of strong competition, it is necessary to implement a method that ensures a careful monitoring of the economic operability and to detect, in real time, the changes that affect the flow of activity. The improvement of calculation methods arose also from the need to realize previsions for the future periods, because the traditional methods don't offer a future perspective of the way of organizing the activity. These benefits can be obtained by applying the direct costing method, which is considered the principal direction to modernize the management accounting. Another type of method are the indicators with forecast value because they make easier the decisional process. This article is focused to highlight the aspects which recommend the application of direct costing method in tourism and public alimentation activity, the usefulness of decisional indicators, the advantages and disadvantages of applying this method.

Keywords

direct costing method, tourism and public alimentation, variable costs, fixed costs, decisional indicators.

JEL Classification

M41, M21

Introduction

In the context of the market economy, the management accounting and calculation methods must respond to requirements of efficient organization of the undertaken activity. For this reason, was necessary to improvement the management accounting and calculation methods, especially those applied in tourism and public alimentation sector, because the managers were faced with their lack of operability and prevision. (Oprea & Călin, 2007)

The strong competition which characterizes the tourism field (Table no. 1) determined the unities from this sector to adapt permanently to new changes, diversifying the facilities offered (Table no. 2) to satisfy the tourists' preferences. In this economic branch, where an unreserved place is lost, an important role is played by expenses correlated with the activity's level, but also the period costs which, although it's not dependent of the volume of activity, in hotelier industry it's has a high value. A comparison made between the two categories of calculation – based on partial costs and complete costs – show off potential disadvantages of „full-costing” method.

The tourism and public alimentation development industry implies improvements of managerial accounting methods applies into entities with hotelier profile. This article presents the way which direct costing method is defined in specialty literature, why we can apply the method in touristic field and how it can contribute to improve the results obtained by a profile unity.

Literature review

The direct costing method was applied for the first time on 1934 in United States of America, later being taken over also by countries from the European continent, such as France, Great Britain and Germany.

On specialty literature, the direct cost (Seiler, 1959) is defined like a concept on the basis of which for the products are allocated only the expenses appeared as direct consequence of production (variable expenses), all others costs being considered costs of period in which they were incurred. Also, Robert E. Seiler mentions in same article that the notion of direct cost is not similar with techniques such as marginal cost or differential cost. The difference between concepts results from the fact that, on comparison with the other two types of costs, the direct cost constitutes a reportation tool of general efficacy of operations of an entity.

At the same time, the specialty literature (Marple, 1995) highlights the differences between direct costing method and absorption costing method. The main noted distinctions concern the way in which costs are divided and the order in which they are applied against income. In case of the absorption costing method we identify production costs and „all others costs”. The production costs are deducted from the net sales in order to obtain a value of gross profit, and all others costs are reduced to reach the desired net profit. In contrast to these, the direct costing method makes a distinction between variable costs and fixed expenses. All the variable expenses recognized by an economic entity are deducted from the net sales with the purpose to reach a certain level of marginal income. Instead, the fixed costs supports the same treatment like all the others costs inside of the absorption costing method.

The direct costing method (Hosick, 1986) represents a technique used in order to expose the costs and the expenses of a business, so that to be presented to the management their impact on the operations, because, in this way, all the costs factors are taken into account in the moment of adopting decisions. In the same time, the direct costing method is based on the idea of knowledge and analyse of general profitability of global results and not full cost, thus contributing to the benefit for each product, contribution given by the result of difference between sale price and cost variables. (Lepădatu, 2013) The costs determined applying the direct costing method are considered more useful in order to establish the prices and the management's decisions and, furthermore, helps to cost controlling.

Although it's also known under the name of variable cost method (Chandra & Paperman, 1976) because in order to determine the cost of products are taken into account only the variable costs in report with production, a major importance must be allocated to fixed expenses. The fixed costs are expenses that don't vary according to the volume of business, but exists in literature the notion of semi-fixed expenses. (Hosick, 1986) Another treatment of fixed costs we find in the book „Managerial accounting”, where the authors groups them in two categories: committed or uncontrollable expenses – remounting at this expenses impacts

the activity of production (rents, depreciations, subscriptions) and relative or controllable expenses – these can be reduced without generate significant modifications and with immediately impact on the activity (publicity, personnel training expenses).

The direct costing method is considered a technique applied in order to satisfy the requirements of modern management. This concept was utilized for a long period of time internal managerial purposes, but in last years has become a basic principle of costs favorable also for external financial reports. (Seiler, 1959) If we ask what determined a quick acceptance of direct costing method in making decisions, Wilmer Wright, in article „Why direct costing is rapidly gaining acceptance?“ presents from the beginning three essential reasons: the information is offered in suitable form in order to establish the decisions, guaranties an improvement control and assure a measure more exactly of income in comparison with traditional methods.

Others arguments that support applying direct costing method make reference to following aspects (Neilsen, 1954): the simplicity of the way of calculation that permits to prepare the reports in a shorter period of time, applies a realist approach into analyze of commune costs, permits both the allocation of costs in time and in accordance with their lines of responsibility, avoid focusing on the production side only, without taken into account all the activities realized at entity level.

Direct costing method in tourism

In order to efficient administration of activity, the managers need to have opportune information's regarding the return and profitability. This information can be obtained only through some specific indicators. The method which offers the necessary indicators to act knowingly is direct costing method.

Another particular aspect of tourism and public alimentation sector is represented by the number of tourists which appeals at hotelier services. The variation of client's number influences the volume of production, which, in turn, is a determining factor in planning of expenses and obtaining the final result. Therefore, all expenses must be analyzed according to their behavior towards the activity level. This is another reason for that the direct costing method is considered the most indicate in touristic segment, because includes in production cost's structure only the expenses which depend by activity volume.

The management effectiveness is demonstrated if to turn to others modern alternatives by which the results of undertaken activity to be knows before finishing the management period. This requirement is not fulfilling by traditional methods of costs calculation, because they don't have a predictive character and don't offers the possibility to make futures analyses. The direct costing method presents indicators with forecast value. Furthermore, to increase the informational power, it takes over elements from the others two methods based on prevision – standard cost and costs center method.

Into the below tables, are presented, on the one hand, figures to highlight a strong concurrence in this economic sector (Table no. 1) and, on the other hand, the facilities types by the managers offers to customers with the purpose to satisfy their actual requirements (Table no. 2).

Every one of these accommodation units is classified by the facilities offered to clients. The degree to fulfil the standards varies from one to five stars (for hotels) and daisies (for pensions), but exist also, tourist structures unclassified on stars or daisies. From the table above, it is noticed an evolution of the numbers of accommodation units between July 2016 and July 2018, with a slight decrease on July 31, 2019. This decrease does not affect the tourism segment, the competitiveness being as high.

Table no. 1 Number of touristic units from Romania between 31 of July 2016 – 31 of July 2019

Accommodation unit	Period of time			
	31 of July 2016	31 of July 2017	31 of July 2018	31 of July 2019
Total:	6.946	7.905	8.449	8.402
Hotels	1.551	1.597	1.633	1.625
Touristic pensions	1.530	1.666	1.709	1.669
Other structures of tourist reception	3.865	4.642	5.107	5.108

Source: National Institute of Statistics, Brochure „Tourist accommodation capacity at 31 of July” 2016/2017/2018/2019 (Capacitatea de cazare turistică existentă la 31 iulie” 2016/2017/2018/2019)

Based on the below table, it is noticed that the tourist structures have substantially diversified their service types, so as to adapt to market requirements. After accommodation, the most important services are, according to the data presented by INS (National Institute of Statistics Romania), parking and restaurant services. A special attention is allocated to business, more and more hotel units make available to visitors their rooms suitably equipped for conferences or other similar activities. The last places in the top of the facilities are occupied by the medical treatment rooms, the food or non-food stores and the cosmetic services.

Table no. 2 Types of services offered by the tourist structures, others than accommodation

Service type	Period of time			
	31 of July 2016	31 of July 2017	31 of July 2018	31 of July 2019
Restaurant and similar	3.932	4.246	4.475	4.391
Pool, sauna	991	1.157	1.259	1.284
Halls or sports fields	811	866	941	925
Conference rooms	1.831	1.921	1.897	1.923
Medical treatment rooms	164	234	237	196
Parking	5.879	6.761	7.208	7.194
Food or non-food stores	191	249	233	194
Cosmetic Services	102	111	107	112

Source: National Institute of Statistics, Brochure „Tourist accommodation capacity at 31 of July” 2016/2017/2018/2019 (Capacitatea de cazare turistică existentă la 31 iulie” 2016/2017/2018/2019)

Direct costing method - primary indicators

Direct costing method arose from the necessity to identification certain calculation procedures in order to guarantee the relative obtaining of production cost and to determine some indicators based on which to be adopted economic decisions suitable to an efficient management of economic activity. The basic indicators of direct costing method with forecast value are unit cost, gross contribution to profit and final result.

The unit cost, calculated as a report between the total variable expenses and the total production obtained, represents a relevant indicator in order to adopt the final decisions, but the analyzes performed based on it need to reflect a faithful image, two aspects are important:

the differentially behavior of the variable costs according to realized analyses (on cost objects or for all activity) and the nature of activity.

The most important indicator of direct costing method is the gross contribution to profit. This indicator reflects the contribution for each cost object to obtain the result or, in other words, the amount remaining from the total value of sales after eliminating variable costs. A special attention must be accorded to fixed costs because, although in basic form of method it's are eliminated from costs calculation, its cannot be considered, entirely, like expenses without any connection with the productive activity of entity. Within the tourism and public alimentation sector certain expenses can be noticed that can be correlate with some phases of the productive activity (these expenses reported to level of production have a fix character): expenses with the salaries of the directly productive personnel, expenses with the amortization of the directly productive equipment's etc. Generally, the gross contribution to profit has positive values. But, when the sale prices cannot cover the variable expenses, the contribution is negative. The negative values of this indicator suggest that the entities unfold an unprofitable activity, lacking the ability to cover the fixed expenses and generate profit. The gross contribution can be calculated on object costs or by total unit.

The last primary indicator of direct costing method is the result calculated as a difference between the gross contribution to profit and fixed costs recorded by the entity. In order to obtain the maxim result, should be respected the next two conditions:

- i. The gross contribution to profit to be maxim;
- ii. The fixed expenses to be minimis (the decrease of fixed costs to minim level not should have consequences on the realization of production activity of unit).

The primary model of direct costing method helps the management of economic entities to adopt the decisions which leading to development and improvement. An added value is offered to this method by price-cost-volume analyze from which results a number of indicators with prevision value.

Price-cost-volume analyze – decisional indicators

The management of economic entities can formulate rational decisions by which obtain the optima results, if starts from idea that both expenses categories – variable and fixed – are in dependence with the volume of activity. This dependence is illustrating through four indicators: the point of equilibrium, the factor of covering, the interval of safe and the dynamic coefficient of safe:

- The point of equilibrium represents the point where the incomes obtained from the production sale are sufficient to cover entirely the variable costs and fixed costs of period recorded by an economic entity, thus, it has not profit, not loss. In other words, the incomes and the expenses are equals, and the result is null.
- The factor of covering express how many percent from all sales are necessary to cover the fixed costs and generate profit. With help of this indicator it can be appreciated the degree of profitability. It is calculated for all production or on object costs.
- The interval of safe shows in monetary units with how much can be diminished the activity so as to not reach the loss area. When the indicator is highest than zero, the production and the sale are profitable, and if it presents negative values, it can reach in loss area. Also, exists the situations when the safe marge is zero, meaning the production and the sale are in point of equilibrium.
- The dynamic coefficient of safe shows in relative figures with how much can be diminished the volume of sales so as to not reach the loss area. This indicator has an important role in decisions regarding the assure the profitability of activity and the establish the capacity of production.

The specific indicators of price-cost-volume analyze presents clear significations and pertinent interpretations which facility the decisional process and contributes to create new improvement directions of undertaken activity by the economic units. The point of equilibrium indicates the stage from which any increase of volume of production generate profit for entity and any decrease of level of sales determines losses, thus the activity become unprofitable. (Oprea & Călin, 2007) Because the factor of covering is calculated both globally and on cost items, this is used to improvement the techniques which assure the manufacturing and the selling of production and presents a substantially contribution to get profit. The last two indicators are utilized in order to determine the risk that an entity to enter in unprofitability area.

The application of direct costing method – advantages and disadvantages

Similar to any other method of management accounting and costs calculation, the direct costing method is associated with a wide range of advantages and disadvantages set out in this section (Oprea, Man, & Nedelcu, 2008).

One of the most important advantage of utilization direct costing method in tourism and public alimentation is confers by three fundamental attributes who governs it: simplicity, efficiency and cost saving. The simplicity derives from the fact that, on establish the cost per product unit, are takes into account only the variable costs, without considering the distribution of fixed costs. This characteristic allows the obtaining, in reasonable time, the necessary information in order to adopt the final decisions. At the same time, the method is efficient and economical since transmits promptly aspects regarding the final result, especially in case of units which have a wide range of products and services and decreases the labor consumption related to the determination of the cost and the final result, thus reducing the expenses generated by getting all of these information's.

Easiness with which are available to management the good information's in order to adopt some pertinent decisions about the occupation policy of accommodation capacity and development policy of activity represents another benefit of applying the direct costing method. Moreover, the direct costing method is a calculation and analyses method, which emphasizes on report between the evolution of expenses and the variation of the physic volume of production, through them classification in variables and fixed. In this way, the control of the management is ensured not only from the perspective of the productive efficiency regarding the center of responsibility, but also from the point of view of the return of the offered services.

Price-cost-volume relationship, applying in direct costing method, favors the management of economic societies because can be calculated certain indicators of return of provided services which contributes at establishing some short-term action strategies. The series of related indicators of price-cost-volume relationship is completed by the point of equilibrium optimizes entirely production and distribution process. The determination of critic point creates the necessary permissions to identify the impact manifested on profit by the volume of activity, on one hand, the variables and fixed costs, on the other hand.

The series of benefits obtained applying direct costing method includes a significantly advantage reported at concurrence from tourism field since can be calculated indirectly tariffs of accommodation at hotel units and sale prices as offer price. Also, this method of calculation assures the bases to formulate some long-term decisions, through determining the point of equilibrium (which helps to conceive short-term action perspectives). These decisions aim, among others, policy of investment, automation of fabrication process, increasing of capacity production (Oprea et al., 2002).

Although it enjoys a large number of advantages, the direct-costing method also presents a number of disadvantages that affect, to some extent, its efficiency.

Thus, must be mentioned the fact that, although are known many procedures of classification the expenses of production in fixed and variables, such division cannot be made with maximum precision, always existing a certain level of relativity. The justification of the anterior affirmation results from the fact that one part from expenses cannot be considered neither fixed, neither variables, they being included on category of semi-fixed or semi-variables expenses, because its change from one interval to another. As a consequence, the unit cost of production and the end result of activity cannot be accurately determined.

Another restriction that limits the efficiency of direct costing method refers at calculating of gross contribution. Indicator with complex character which is composed from fixed expenses of period and from final result, it is not sufficient to supply the complete information's necessary decisions regarding to obtaining and distribution of offered products and services. Although gross contribution has positive values, exist situations when the fixed costs (whose value is known at the end of period) are the highest and the unit presents losses. One solution to avoid such cases would be the correlated application of several indicators that act in administration of the society. Applying direct costing method supposes to evaluate the stocks at variable cost. Because this practice is not accepted by the financial rules which are the basis of the elaboration of the annual financial statements, additional calculations are required. This disadvantage not only characterizes the presented method, so is specific to all the methods that involve the calculation of partial costs.

Based on the above affirmations, the principal conclusion would be that the offered advantages of applying direct costing method weigh more than its limits. In tourism field, applying to this method confers an added value which contributes to improvement the management accounting and calculation of costs. By improving the method would can be eliminated last two mentioned disadvantages, and the advantages satisfy the information needs faced by the management of tourism.

Conclusions

The tourism has developed in the last years, the competition in this sector (according to table no. 1) and the tourists preferences was increasing, all of this determined the entities to diversify the offered services (according to table no. 2).

Applying direct costing method in activity of tourism and public alimentation facility the decisional process through the indicators offered of this. The basic model of method includes three indicators, but the most important of them is the gross contribution to profit. This indicator reflects the extent to which every cost object contributes to achieving the final result and masking the fixed costs. The gross contribution to profit is used in economics analyses because it has as purpose the valuation of obtained performance. The point of equilibrium should not be excluded from the analyses. Starting from the basic formulas, can be calculated other two indicators in order to reach a certain profitability target: the volume of activity so as to achieve a certain profit and the turnover required to achieve a certain rate of profit. Besides the three indicators with decisional value, a series of attributes are associated with the basic model of the direct costing method that reinforces its position as a cost calculation method. Among them, we can find the following: can be considered a method of calculating the results on short time intervals and an easy tool for the management of economic entities and groups the expenses into fixed and variables, the delimitation criteria being their behavior in relation to the variation of the productive volume.

The price-cost-volume relationship in direct-costing method increases the informational power with the following indicators: the point of equilibrium, the factor of covering, the interval of safe and the dynamic coefficient of safe. Although each of them has a substantially contribution to trace the ways to improve the activity, the principal pylon is the factor of covering, which permits, directly or indirectly, obtaining the others indicators.

The direct costing method presents, like any other method of calculation, advantages and disadvantages, but, during all this time period in which it has undergone many transformations, most of the restrictions that limited its operability have been eliminated. Thus, the indicators with decisional and predictive power and the benefits of using it gives the direct costing method a leading place in the category of modern calculation methods applied in the activity of tourism and public alimentation.

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LUXURY FASHION CONSUMPTION AMONG TEENAGERS: ATTITUDE AND PURCHASE INTENT

Andreea-Ionela Puiu¹

¹⁾ The Bucharest University of Economic Studies, Romania

E-mail: andreeaipuiu@gmail.com

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Abstract

Luxury fashion goods comprise those items that are desirable but not essential for consumers. Despite this restrictive description, the luxury choice is bringing more and more costumers all over the world for various reasons.

The present research investigates several agents that influence teenagers' approach toward acquiring of luxury fashion items and also their purchase intention. The data was gathered from teenagers involved in the Romanian education system, a total of 350 responses being registered. To the gathered data was applied exploratory factor analysis, supported by confirmatory factor analysis. Using the structural equation model there was revealed a negative impact of materialism on attitude towards acquiring fashion goods among teenagers. Also, teenagers purchasing intention for luxury items was positively influenced by their attitude toward acquiring luxury fashion items. In the final, there were discussed assumptions of the present study. Limits and directions for future research were exposed.

Keywords

Luxury Fashion Goods; Fashion Industry; Consumer Behavior; Attitude; Exploratory Factor Analysis; Structural Equation Model;

JEL Classification

C12; C38; L67; O11

Introduction

Luxury fashion items represent a broad category that comprises clothes, shoes and accessories that bring prestige to their owners despite any functionality.

Consumption was classified into four categories: necessary – comprising those items used for life-sustaining, basic – encompass items for progress and prosperity, affluence goods and luxury goods (Smith, 1776). The last category, luxury, is characterised by a limited supply, rarity and a higher price.

Acquiring luxury goods is perceived as a sign of social position and wealth, while the higher price intensifies the importance of this indicator. It was highlighted that luxury plays a vital role in building social stratification (Kepferer and Bastien, 2009; Nelissen and Meijers, 2010; Dion and Borraz, 2017;). In this respect, individuals admit luxury as an imperative element to establish themselves as characters from the social category that they wish to belong.

In this regard, consumers are more inclined to pay considerable price differences for luxury brands, since those goods present an exclusive series of features such as a high quality, reputation, recognisability and exclusivity. The present study intends to recognise the principal agents that influence the teenager's approach towards purchasing luxury fashion goods and to examine the influence of teens attitude on purchasing intention of luxury fashion items.

After an extensive literature revision of previous analysis conducted on luxury items, there were considered five essential indicators that influence people attitude and their purchase strategy toward luxury fashion items, factors such as brand consciousness, fashion innovativeness, fashion involvement, materialism and social comparison,

Brand consciousness is determined by people irrational bias toward famous brand fashion items. Often, consumers realize a confusion among price, quality and brand name, considering famous brand names as being a symbol of quality (Husic and Cicic, 2009). Individuals who are in a continuous search of social status confirmation are more prone to pay a higher price for those items because the price is identified as a barometer of those items quality (Deeter-Schmelz et al., 2000).

Individuals that experience a high level of brand consciousness noticed that brands offer social status and fame. As a consequence, consumers are more inclined to buy luxuries and renowned brands (Liao and Wang, 2009), the brand name being one of the essential variables concerning luxury items shopping.

Materialism represents the importance that an individual assigns to "worldly properties" (Belk, 1984) and it is characterised as an aggregation of related features, values and attitudes that concentrates on ownership, as well as an appropriate design in selecting items. Also, materialism expresses several attitudes that recognise ownership as a symbol of success, considering that more properties lead to a higher level of happiness (Chan and Prendergast, 2007). Materialism is studied considering three perspectives: the importance of ownership, the role of those acquisitions in obtaining an appropriate level of satisfaction and the role of ownership in determining individuals prosperity (Richins and Dawson, 1992).

Social comparison theory assumes that individuals tend to compare themselves with others to assess and to approve their behaviour and their social status. Individuals aspire to own luxury items to impress their networks with the social status gained by the property of those luxury goods. People that belong to the middle class tend to acquire a slight amount of luxury items to be approved by the wealthier classes (Hucis and Cicic, 2009).

Innovativeness refers to the willingness manifested by an individual to accept novel ideas, products and services, comparable in time of acceptance with other people that belong to the same social system (Rogers, 1995). Fashion innovativeness characterises those people that are in a continuous search to distinguish themselves by searching for novel and distinct methods to maintain their state of innovators, while fashion followers adopt a reproduction role (Beaudoin and Lachance, 2006). Fashion innovators manifest a greater need for uniqueness, they tend to be more socially mobile and to adopt a more favourable attitude toward risky situations.

Involvement describes the degree to which a person recognises an appropriate purchase decision as being essential for himself. Consumer's preferences for luxuries are intimately conditioned on their level of engagement (Deeter-Schmelz et al., 2000). Previous research showed that a consumer's attitude toward brands is influenced by their level of involvement.

The theory of reasoned action (Fishbein and Ajzen, 1975) established an existing relationship between attitudes and the actual behaviour of individuals. According to this model, the actual behaviour of individuals is determined by their behavioural intention to achieve a distinct task. Several empirical studies revealed a positive relationship among a positive attitude toward the acquisition of luxury items and the consumers' actual purchase intent (Zhang and Kim, 2013). Based on the literature review earlier exposed, there were formulated the following hypothesis:

1. Brand consciousness, materialism, social comparison, fashion innovativeness and fashion involvement exhibits a positive effect on the attitude towards purchasing luxury fashion articles among teenagers.
2. Attitude regarding the acquisition of luxury fashion items is affecting positively the shopping intention of luxury fashion items among teenagers.

Methodology

The instrument, sample, data collection and method of analysis

The methodology, implemented in this article, it is based on a questionnaire that aims to measure seven latent variables like, brand consciousness (Sproles and Kendall, 1986; Tai and Tam, 1997), fashion innovativeness (Goldsmith and Hofacker, 1991), fashion involvement (Chae et al., 2006), attitude toward buying luxury fashion items (Park et al., 2007), materialism (Wong et al., 2003), social comparison (Chan and Prendergast's, 2007), and the purchase intent of luxury fashion items (Summeres et al, 2006). The survey was originally formulated in English and then was transposed in Romanian. All dimensions were measured on a seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), the questionnaire was applied to students enrolled in public Romanian universities, aged between 18-35 years. A total of 350 responses was registered: 286 were women (81.2%), and 66 were men (18.8%). Also, 209 (59.4%) respondents were employed, while 143 (40.6%) were not employed. Concerning the monthly net income of the respondents, 41.8% of them earn less than 1000 lei, while only 6.8 of them earn more than 5000 lei. Concerning the frequency of purchasing luxury items in the latest six months, 45.2% of respondents stated that they did not buy any luxury items, 38.6% of respondents bought among 1 and 3 items, while only 3.7% bought more than 10 items. Concerning the amount paid on those purchases, 73.00% of respondents spend less than 500 lei, 22.7% spend among 500-1000 lei, while only 0.9% spend among 2500 and 3000 lei.

To the collected data was applied exploratory factor analysis, supported by confirmatory factor analysis and a structural equation model, all of them carried in the R Statistical Software. The first step, in the exploratory analysis, was to manage a graphical illustration of the correlation existed between studied items (fig. no. 1). Most of the correlations are encountered in the interval 0.3-0.7, excepting some items that record a score below 0.3, but the deviation is not significant to eliminate them from the analysis. Also, some variables correlate negatively.

The null hypothesis of Bartlett's test of sphericity test states that the correlation matrix is not different from the identity matrix, meaning that there are no significant correlations among our observed variables. The registered score of the p-value ($<2.2e-16$) permits to reject the null hypothesis and to perform the exploratory factor analysis. Also, the Kaiser-Meyer-Olkin Statistics registers a level of our index of factorial simplicity of 0.86, a "meritorious" score (Kaiser, 1974).

To find the right number of factor for the exploratory analysis was conducted a scree plot, where graphical representation suggests that seven factors were recommended (fig. no. 2).

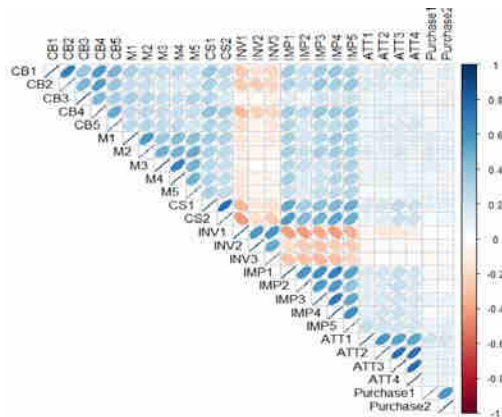


Fig. no. 1 Graphical Representation of Correlations between Items

Source: Author's calculus.

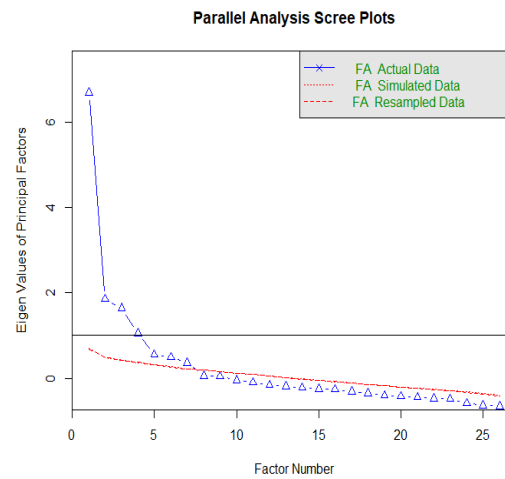


Fig. no. 2 Parallel Analysis Scree Plot

Source: Author's calculus.

For the exploratory factor analysis was used as factoring method the weighted least squares and oblimin rotation. In terms of adequacy tests, we have the root mean square of the residuals (RMSR = 0.2) and the root mean of squared error of approximation (RMSEA = 0.041), both recording scores lower than the 0.08 cut-off. The Tucker-Lewis index of factoring reliability is encountering a value of 0.952, the recommended cut-off being 0.95.

In terms of factor loadings, all registered scores are higher than 0.4. In terms of uniqueness recognised as the residual variance of our observed variables or the part that couldn't be explained by the studied dimensions, registers pretty low scores ranged between 0.080 and 0.671.

The obtained dimensions were checked for reliability using Cronbach's Alpha metric, the scores being registered in brackets: brand consciousness ($\alpha=0.81$), materialism ($\alpha=0.82$), social comparison ($\alpha=0.86$), fashion innovativeness ($\alpha=0.79$), fashion involvement ($\alpha=0.87$), attitude ($\alpha=0.79$) and purchase intention ($\alpha=0.73$).

Further to handled confirmatory factor analysis, there were checked all variables for normality. As can be seen, in general, variables follow a normal distribution, the variation manifested by some variables not being so severe to exclude them from the analysis (fig. no. 3). The confirmatory analysis was run using the *lavaan* package (Yves, 2012) that converged normally after 38 iterations.

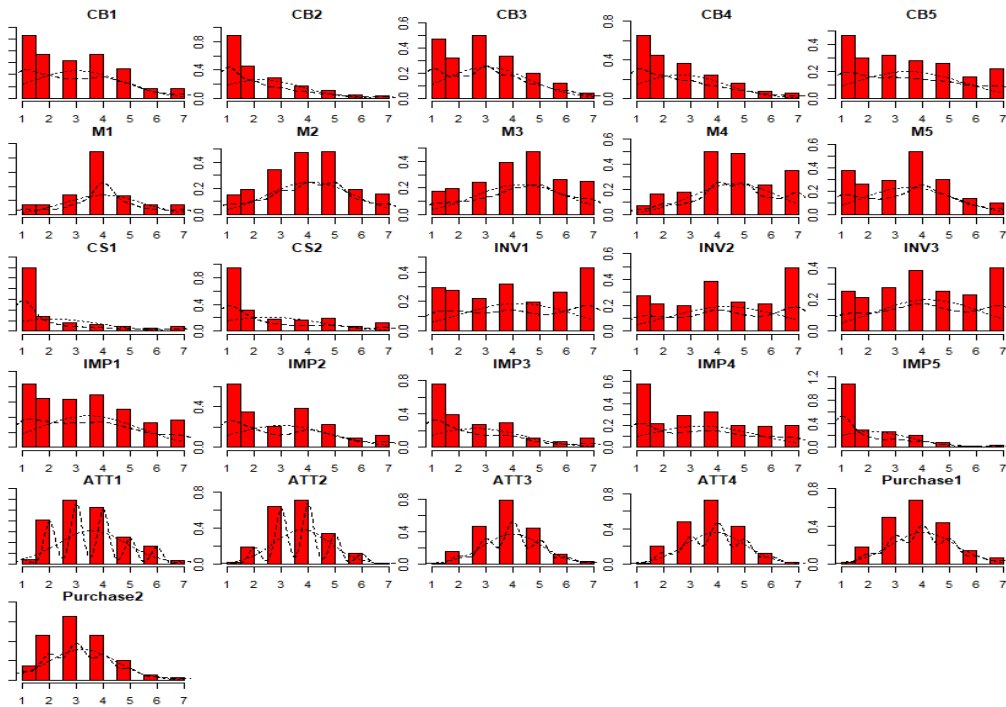


Fig. no. 3. Variables Normality Distribution

Source: Autor's calculus.

To perform the confirmatory factor analysis was used the maximum likelihood estimator. To diagnose the specified model we have the fit indices, Tucker-Lewis (TLI = 0.942) and Comparative Fit Index (CFI = 0.950) that register scores closer to the threshold of 0.95. Also, the root mean square error of approximation (RMSEA = 0.046) and the standardized root mean square residual (SRMR = 0.045) register values below the 0.080 threshold.

The Adjusted Goodness of Fit Index (AGFI = 0.968) registers a value above the 0.90 threshold and Goodness of Fit Index (GFI = 0.976) is above the 0.95 threshold.

In the last step of the analysis, it was desired to investigate the relationship between brand consciousness, materialism, social comparison, fashion innovativeness and fashion involvement in determining teenagers attitude toward luxury fashion items. Also, to examine if the attitude positively affects their decision to purchase luxury fashion items.

Table no. 1 Regressions in the Structural Equation Model

Direct Effects	Estimate	Standard Error	z-value	P-value	Std.all
Attitude ~ Fashion Involvement	0.214	0.114	1.868	0.062	0.201
Attitude ~ Materialism	-0.023	0.083	-0.271	0.786	-0.021
Attitude ~ Brand Consciousness	0.104	0.083	1.247	0.213	0.097
Attitude ~ Fashion Involvement	0.103	0.085	1.220	0.222	0.097
Attitude ~ Social Comparison	0.121	0.098	1.235	0.217	0.113
Attitude ~ Purchase Intention	0.122	0.069	1.757	0.079	0.115

Source: Author's calculus.

As it can be observed from the previous table (table no. 1), all examined dimensions exhibit a decisive impact on the teenager's attitude toward buying of fashion luxury items, excepting

materialism that manifests a negative influence on the attitude of teenagers, but the relationship is not statistically significant. On the other hand, the purchase intention of teenagers is positively affected by their attitude toward fashion luxury items, but the relationship is not highly statistically significant.

Discussions, limitations and future research

The present study aimed to distinguish determinants that affect teenagers attitudes' toward the purchase of fashion luxury items. After an analysis of the literature review were identified the following primary factors: brand consciousness, materialism, social comparison, fashion innovativeness and fashion involvement. Also, there was studied the impact of teenagers attitude on buying intention on luxury fashion items.

Firstly, the obtained results revealed that fashion involvement exhibits a positive influence on the attitude toward luxury fashion items, but the impact is not statistically significant ($p\text{-value}=0.062>0.05$). On the other side, materialism manifests a negative influence on teenagers attitude, but again the influence is not statistically significant ($p\text{-value}=0.786>0.05$). Brand consciousness, fashion involvement and social comparison manifest a positive influence on the teenagers' attitude toward luxury fashion items, but in all cases, the influence is not statistically significant.

Concerning the influence manifested by the attitude on actual purchase intention, it was determined that the association is positive, but again the relationship is slightly statistically significant ($p\text{-value}=0.079>0.05$).

The slight influence of attitude on the actual purchase intention could be explained by the lower net income reported by the majority of respondents and their capacity to invest in the purchase of luxury fashion items.

Although Romania is developing as an attractive market for luxury products, prior investigations were conducted on more developed nations (Summers et al., 2006; Zhang and Kim, 2013), therefore the present study comes to address this aspect.

Also, this study has several limits. Even if the sample was a random one, it is not representative of the whole population of teenagers aged between 18-35 year from Romania. The sample is also limited by the fact that most of the respondents are females who are the fit target market of luxury fashion items but are not illustrative of the overall population.

According to previous research, individuals behaviour and their attitude are influenced by differences that exist among individuals, such as past experiences in buying luxury fashion items. This experience manifests a distinct influence on people attitude and their purchase intention of fashion luxury items. As future analysis is proposed an investigation that could involve buyers previous purchase experience to understand better potential agents that affect teenagers attitude and purchase intention of luxury fashion products.

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AGRICULTURAL PRACTICES TO IMPROVE SOIL QUALITY FROM THE PERSPECTIVE OF REDUCING GREENHOUSE GAS EMISSIONS

Lavinia Popescu¹ and Adela Sorinela Safta²

^{1),2)} The Bucharest University of Economic Studies, Romania

Email: popesculavinia14@stud.ase.ro; saftaadela19@stud.ase.ro

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Abstract

The paper provides an overview of the agricultural economy. Prioritizing an action behavior in terms of vulnerabilities favors the orientation of agriculture through more environmentally friendly methods. The emphasis is on the possibility of facilitating the implementation and promotion of a responsible production model with the environment. During the research we tried to highlight issues that, in our opinion, are important for the development of the agricultural sector as part of the economy. An important role is played by the implementation of the best practices in the correct management of the land and the promotion of the organic production models can significantly contribute to the increase of the carbon absorption in the soil and, at the same time, to the indication of the possible improvements of their performance. The purpose of the following research is to collect data and information on the most efficient management models that will create the premises for the production of production models that will respond in the future to climate change challenges, especially from the perspective of reducing greenhouse gases, in depending on soil quality.

Keywords

Soil, environmental, agricultural, carbon emissions, management

JEL Q00, Q24, Q10, Q52, Q53

Introduction

One of the main objectives in the field of agriculture and rural development is to maintain a low level of greenhouse gas emissions generated by the agricultural sector. The role of research in the field and studies have shown an important factor in the fact that a reduction of the carbon footprint per ton of food produced from organic farming compared to conventional agriculture, in principle, due to the abandonment of the use of chemical fertilizers and pesticides.

Research and development is important for all academic fields and industries. From this perspective, agriculture as a field is not an exception, having a special relevance starting from

tradition. The study points out that, in scientific research, interdependence should be analyzed with other areas that have the role of improving the quality of research through innovation, so that agricultural sector research is complemented by various forms of academic knowledge that have proven to be vital, such as would be the quality soil. Approaching innovations in terms of methodologies applied in other sciences such as management, mathematics, even correlating soil degradation processes, determining the main pollutants, monitoring and controlling the soil, monitoring the soil quality status are relevant for agriculture. First, the dissemination of information from various fields can make information more efficient. The proper classification of these information resources may entail prioritizing the use of new information on detailed topics, such as performance in land / soil use, that is, which production would lead to higher long-term profit.

Low carbon agriculture sector analysis

The achievement of the objectives set in this research project requires the definition, construction and application of a specific research methodology focused on the evaluation of the costs and the economic-financial impact of the sequestration of 4% / year of the carbon dioxide at the farm level. The use of specific econometric instruments and methods is envisaged, highlighting the possibility of defining economic models for decarbonising agricultural production. From a methodological point of view, both descriptive analysis will be applied to highlight the factual situation of sequestration of a certain percentage of carbon dioxide at the farm level, as well as the interactive method to identify the possible trends, evolutions and perspectives in applying these measures. It will also adapt, calibrate and run in the subsidiary, some models already validated in the literature, which may complement the research.

The researches that will be carried out within this theme will focus on the description of factors through which to exploit the decarbonisation potential of agriculture and to promote an environmentally responsible agricultural model. At the same time, it is envisaged to improve the studies regarding the interactions determined by promoting the carbon dioxide storage at the farm level and the environmental requirements at the farm level, while analyzing the soil quality.

Agriculture and environmental issues

For Romania, the main sources of greenhouse gases are nitrous oxide (N₂O) based on soil nitrification and management of natural fertilizers, the resulting methane (CH₄) from enteric fermentation of herbivores, mainly cattle, and carbon dioxide (CO₂) from the energy / fuel used by buildings and machines. 50% of agricultural emissions are nitrogen oxide, followed by 45% methane, while only 5% of emissions are based on carbon dioxide.

Carbon sequestration contributes to the overall goal of lowering greenhouse gas concentrations in the atmosphere. The incorporation of the vegetal mass in the soil on the agricultural lands where green crops are established, contributes to carbon sequestration. But the result of this objective will be quantified by monitoring the surfaces on which green crops were established, as well as by quantifying the amount of plant biomass resulting from afforestation. Lack of knowledge in the field, due to problems with the advisory system for farmers in agriculture, but also the pursuit of an immediate profit, are some causes that have led to often inadequate agricultural practices, with negative influence on the environment. Studies have shown that agriculture generates almost 15% of the country's greenhouse gas emissions (at the level of 2012).

The process of land abandonment has accelerated in Romania in the past years, resulting in the loss of biodiversity. Uncultivated land has increased by 50% since 2005, and, at 952,000 ha, constitutes 7% of the total agricultural area of the country (2010). The abandonment of

agricultural land has far-reaching effects on ecosystem services, such as increased carbon storage, lower soil erosion, better water quality, and loss of traditional cultural landscapes.

The figure no. 1 below shows the greenhouse gas emissions from EU28 in 2017, broken down by main source sectors. Energy accounts for 80.7% of greenhouse gas emissions in the EU28 in 2017, and transport accounts for about one third. Greenhouse gas emissions from agriculture contribute 8.72%, industrial processes and product use by 7.82%, and waste management by 2.75%.

In the agricultural field a main objective of the development of the rural area is to maintain a low level of greenhouse gas emissions generated by the agricultural sector depending on the local characteristics.

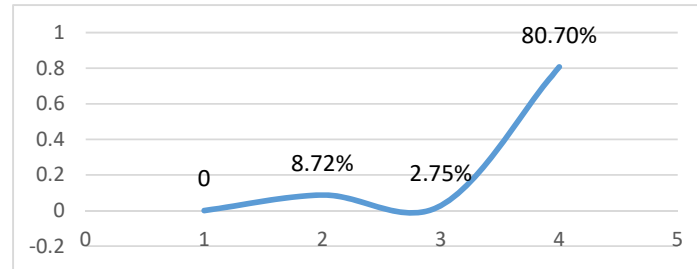


Fig. no. 1 Greenhouse gas emissions in the EU by sector in 2017

Source: CEE 2017

The researches that will be carried out within this theme will focus on the description of factors through which to exploit the decarbonisation potential of agriculture and to promote an environmentally responsible agricultural model. At the same time, it is envisaged to improve the studies regarding the interactions determined by promoting the carbon dioxide storage at the farm level and the environmental requirements at the farm level, while analyzing the soil quality.

Consideration of soil properties, climate and crop management are vital characteristics from the perspective of emissions. The following scenarios are aimed at the interaction between crop growth, soil carbon, nitrogen needs and climate.

Most agricultural soils contain too little natural nitrogen available to meet the crop requirement during the growing period. As a result, it is necessary to supplement the nitrogen naturally contained in the soil each year. Applying the right amount of nitrogen at the right time is the basic requirement of good fertilizer management.

Each agricultural producer must understand the need for accurate assessment and periodic monitoring of plant nutrient requirements based on realistic forecasts, depending on: local technological conditions, tradition, sun, climate, expected production yield.

Nitrogen needs vary considerably in different crops, and within the same crop, with the level of harvest possible to be achieved in a certain conjuncture of pedoclimatic and technological factors.

The production capacity of a crop, determined genetically, can be reached only under ideal conditions, when through the factors mentioned above optimal conditions for plant growth and development are achieved.

The land management for carbon sequestration is highlighted by soil carbon inventory, especially by the form in which it is kept, the capacity, the persistence and bulk density, the textural class of the soil.

Changes in crop management practices management practices that affect soil organic dynamics C are crop selection, high biomass crop rotation, crop residue management, nutrients and water management, use of organic fertilizers and management of organic soils and degraded land (Hutchinson et al., 2007; Petersen et al., 2013; Smith et al., 2012).

The research revealed a difference in soil carbon when the C factors had the effect of applying a management method based on the interdependence between production and crop rotation, soil quality, carbon uptake, climate. At the same time, soil carbon changes are caused by land use changes.

The management applied through the modification of some practices of crop management have first and foremost an impact on the organic texture of the soil through the rotation and selection of crops, which can produce biomass by managing crop residues.

The climate characterized by successions of drought years followed by rainy years leads to, during the drought years, the accumulation of nitrates in the unsaturated area between the root layer and the groundwater aquifer, nitrates which are then transferred to the free water in the rainy years (piston effect). In this way, the annual losses of nitrates, even if they are small in the dry years, can lead, by accumulation, to great pollution of the groundwater aquifer in the years with excess precipitation.

It is considered as a good agricultural practice to adapt the fertilization and the timing of its fertilization to the type of agricultural crop and to the characteristics of the soil. The assessment of the nutrient requirement is made according to the nutrient reserve of the soil, the local climatic conditions, as well as the quantity and quality of the predicted production.

Results

The land management for carbon sequestration is highlighted by soil carbon inventory, especially by the form in which it is kept, the capacity, the persistence and bulk density, the textural class of the soil. In certain areas, especially on soils with thin limestone substrate, there is an imminent danger of groundwater pollution. Depending on the local specificity, this danger should always be taken into account when applying organic fertilizers in such high risk areas. The calculation method regarding the contribution of nitrogen from organic sources is important for the assessment of greenhouse gas emissions from agricultural activities. Organic nitrogen can be used by crops only after its passage into an inorganic form through mineralization or gradual decomposition of organic matter from the soil, first in ammoniacal nitrogen and then in nitric nitrogen.

Investments in the modernization of agricultural holdings aimed at maintaining a low level of greenhouse gas concentrations in the atmosphere should, in particular, take into account the control of greenhouse gas emissions in zootechnical production (methane and nitrogen oxide). Nitrogen is par excellence a plant-specific nutrient and is therefore found in different amounts in natural organic fertilizers, especially in the form of protein from animal manure.

Due to its peculiarities of geochemical behavior, it is difficult to manage both in monoculture and in isolation.

Also, it is difficult to determine with sufficient precision the amount of nitrogen required for a certain crop during the active vegetation period, respectively to calculate the dose of nitrogen fertilizer to be applied for fertilization. It is considered as a good agricultural practice to adapt the fertilization and the timing of its fertilization to the type of agricultural crop and to the characteristics of the soil. The assessment of the nutrient requirement is made according to the nutrient reserve of the soil, the local climatic conditions, as well as the quantity and quality of the predicted production.

The ability of the soil to provide the nutrients needed for the plants varies depending on the type of soil, respectively its level of fertility.

The fertility level of a soil can be degraded if the cultivation technologies are incorrect or, on the contrary, it can be increased if cultivated in a way that improves its chemical, physical and biological properties.

A soil with good natural fertility and productivity can be depreciated by being poor in one or more nutrients or by degradation of some properties or can be totally destroyed by erosion phenomena; a soil with low natural fertility can become productive by correcting the limiting

factors that prevent the normal growth and development of the plants (acidity, excess or nutrient deficiency, etc.).

The conservation and improvement of the fertility of a soil and the creation of adequate conditions of mineral nutrition is ensured by a rational fertilization, in a system of crop rotation. A rational fertilization practice involves the acquisition and acquisition of technical-scientific information that will allow a relevant answer. Any nitrogenous fertilizer in organic form is mineralized as a result of the activity of bacteria present in the soil, ultimately resulting in nitric and ammoniacal nitrogen. The main evolution factor for mineral forms of nitrogen is the ratio between carbon and nitrogen in fertilizer (C / N).

Carbon sequestration contributes to the overall goal of lowering greenhouse gas concentrations in the atmosphere. The use of crops with a high capacity to fix nitrogen in the soil, contributes to achieving the objectives of maintaining a low level of greenhouse gas concentrations in the atmosphere.

The agricultural producers have the possibility to buy the fertilizers necessary for the fertilization of the crops at any time of the year, as needed. Deposits must have a capacity to ensure storage for a period greater than one month than the prohibition interval for applying organic fertilizers to the field defined by the period when the average air temperature is below 5°C. Loss of nitrogen in the form of gases in the atmosphere (Ng).

These losses can occur through different mechanisms, especially by denitrification and volatilization of ammonia on the surface of alkaline soils.

Nitrogen is par excellence a plant-specific nutrient and is therefore found in different amounts in natural organic fertilizers, especially in the form of protein from animal manure. Rapid development of fertilization methods and technologies using fertilizers extraradicular and liquid ones were due both to the possibility of controlled application of according to the phases of vegetation, culture, agrofond and nutritional deficiencies as well increase cost efficiency indicators fertilization - economic results.

Due to its peculiarities of geochemical behavior, it is difficult to manage both in monoculture and in isolation.

The conversion of nitrogen fertilizers into the soil, through the passage of nitrogen from one chemical form to another, can lead, in most cases, to losses of assimilable mineral nitrogen and to changes in soil reaction, which can reduce the efficiency of these fertilizers.

Table no. 1 Specification of crops

Nr.crt.	Specification of crops	N	P ₂ O ₅	K ₂ O
1	Autumn wheat straw 1: 1.3	26.5	13.7	16.4
2.	grain rye straw 1: 1	27.5	10.8	22.3
3.	grain oat straw 1: 1.5	28.5	11	31.2
4.	Corn grains: strain 1: 1.6	27.5	12.5	16.5
5.	Sugar beet roots: Leaves and parcels 1: 1	4.9	2.0	6.0
6.	Pea berry berries: 1: 1.5 edges	61.0	16.6	28.0
7.	Soybean beans: 1: 1.5 rods	70.0	22.5	34.0
8.	natural grass grass fan	24.0	5.6	18.0
9.	Natural grassland grass	6.5	1.4	4.5
10.	Hemp stems	10	8.5	17.5

Source: Insse 2017

The table above shows that the soil with the richest culture in N is the one with soy, while other relatively more frequent crops are located in the middle area with 1/3 of N, so that for each one the method will be applied of the appropriate nutrient, as in estimating the level of

the planned crops, the climatic characteristics of the place must also be taken into account, since they are decisive in the dynamics of the fertilizing elements in the soil and especially in the mineralization of the organic matter and in the movement of nutrients in the soil, soil profile, below the rooting area.

The hypothesis of carbon storage in the soil could be an option to mitigate climate change for agriculture, by managing the land and changing its use. In this study, we will consider the possibility of adapting the methods used to estimate carbon changes in the soil. For large-scale assessment, the schedule CO₂ emissions from the soil should be taken into account.

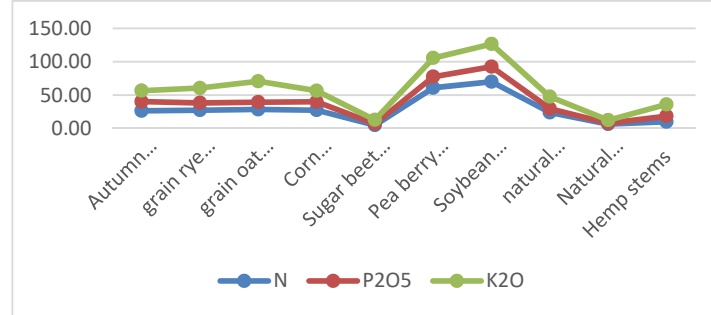


Fig. no. 2 Specifications of crops

Source: Developed by the authors

The soil is a non-renewable resource that requires constant monitoring to prevent its degradation and to promote efficient management. The soil may degrade depending on many items. Of strategic importance is the type of fertilizer, the age and the technique of applying fertilizers with N, with the amount of nitric nitrogen resulting from mineralization of the organic matter from the soil and other organic residues incorporated into the soil as well as with the amount of nitrogen entering the soil on other ways.

Solid fertilizers can produce pollution only in the case of heavy rains that occur immediately after application.

$$DN = Nc - (Ns + Na + Nb + Nr) + (Ni + Ng + NI) \quad (1)$$

where:

DN is the nitrogen dose from fertilizer (organic + mineral) for the expected harvest, in kg / ha;

Nc is the nitrogen requirement for the expected harvest, in kg / ha;

Ns is the nitrogen available from the soil during the vegetation period, in kg / ha;

Na is nitrogen from irrigation water and from the atmosphere (powders, precipitation), in kg / ha;

Nb is nitrogen from biological fixation, in kg / ha;

There is no nitrogen from the mineralization of the plant residues of the previous crops, in kg / ha

- Ni is nitrogen lost by immobilization by soil microorganisms, in kg / ha;
- Ng is nitrogen lost through volatilization, including denitrification, in kg / ha;
- NI is nitrogen lost through surface runoff and leaching, in kg / ha.

The prohibition periods for applying fertilizers on the ground are defined by the time interval when the average air temperature drops below 5°C. This interval corresponds to the period when the requirements of the agricultural crop relative to the nutrients are reduced or when the risk of percolation / leakage to the surface is high.

When using nitrogen fertilizers in a predominantly organic form, it must be borne in mind that nitrogen, before being absorbed by plants, must undergo mineral form through a series

of transformations they undergo in the soil. Therefore, these fertilizers are applied with sufficient time before the time of maximum absorption by the crops.

When applying chemical fertilizers it is necessary to take into account the crop specific requirements it is recommended to be applied according to the ratio between nutrients.

For example: those where P_2O_5 predominates are more suitable for pre-sown grain cereals, those with a nitrogen ratio are suitable for technical crops, etc. Soil properties influence the use of fertilizers: larger quantities of fertilizers can be administered on heavy soils than on light ones; fertilizers with alkaline physiological reaction will be applied on acid soils, and fertilizers with acid physiological reaction will be applied on alkaline soils.

The periods when applying organic fertilizers should be determined according to different conditions as early as possible, during the crop growth period, to maximize crop nutrient uptake and minimize the risk of pollution.

On the heavily degraded meadows, only one crop is obtained during the year, and in the case of other meadows two or three harvests, but with the highest weight at the first harvest.

The application of organic fertilizers on permanent pastures (pastures and meadows) is subject to the condition of not exceeding the dose of 170 Kg N ha⁻¹ year⁻¹ and not being applied during the prohibition periods.

For the establishment of the fertilization plan, the export of the elements for each plot according to its mode of operation is considered.

Member States may require the mention of calcium, magnesium, sodium and sulfur content fertilizers with secondary nutrients and, if the conditions provided for in Article 17 are met, from the fertilizers with main nutrients placed on their markets, shall be expressed as follows:

- (a) in the form of oxide (CaO, MgO, Na₂O, SO₃) or
- (b) in elemental form (Ca, Mg, Na, S) or
- (c) in both forms.

For the conversion of calcium oxide, magnesium oxide, sodium oxide and sulfuric anhydride content into calcium, magnesium, sodium and sulfur content, the following factors are used:

- (a) calcium (Ca) = calcium oxide (CaO) × 0.715;
- (b) magnesium (Mg) = magnesium oxide (MgO) × 0.603;
- (c) sodium (Na) = sodium oxide (Na₂O) × 0.742;
- (d) sulfur (S) = sulfuric anhydride (SO₃) × 0.400.

The value withheld for the declaration is the value rounded to the nearest decimal place both when the content is expressed as oxides and if it is expressed in elementary form.

acid soils with pH <6.5;

- neutral soils with pH = 6.5 - 7.5;
- alkaline soils with pH > 7.5.

Many studies have evaluated cropland, grassland and marshland, while Schmidt (2008) evaluated the transition from natural land to agricultural land. For example some studies the fact that a change factors from permanent cover to an annual harvest, plus simultaneous factors for the changes of the crop management involves the achievement of a balance between the soil carbon and its kinematic function of the use and degradation of the soil. Not infrequently the concern is to follow the cyclicity of the crops used depending on the texture of the soil. But a technical formula cannot be validated precisely because depending on the periods of maintenance of the soil with fertilizers these techniques have to be controlled according to external factors.

Consideration of soil properties, climate and crop management are vital characteristics from the perspective of emissions. The following scenarios are aimed at the interaction between crop growth, soil carbon, nitrogen needs and climate.

Most agricultural soils contain too little natural nitrogen available to meet the crop requirement during the growing period. As a result, it is necessary to supplement the nitrogen

naturally contained in the soil each year. Applying the right amount of nitrogen at the right time is the basic requirement of good fertilizer management.

Conclusions

The role of research in the field and studies have shown an important factor in the fact that a reduction of the carbon footprint per ton of food produced from organic farming compared to conventional agriculture, in principle, due to the abandonment of the use of chemical fertilizers and pesticides. One of the main objectives in the field of agriculture is to maintain a low level of greenhouse gas emissions generated by the agricultural sector. Farmers must continually improve the techniques adapted to the new challenges of keeping the soil covered, to use techniques for managing the environment of the land to help maintain the carbon in the soil. Research has revealed that soil carbon changes are caused by land use changes. In conclusion, we can say that, conservation and improvement of the state of natural resources and habitats by encouraging the use of innovative, environmentally friendly agricultural production methods that come to protect the environment, biodiversity conservation and the improvement of water, soil and natural landscape quality are vital. In the field of rural development, agricultural economy, economic environment, we need a clean environment that is based on the rational use of natural resources, increasing competitiveness by identifying the best practices in the field. Prioritizing an action behavior in terms of vulnerabilities favors the orientation of agriculture through more environmentally responsible methods. In part, the need for innovation in agriculture will contribute to the understanding of the economic-financial impact of the storage of a percentage of carbon dioxide at the farm level and to the definition of the demands imposed by achieving a functional and highly competitive market economy. The role of the research is also the possibility of developing environmentally responsible agricultural production models that will significantly contribute to the decarbonisation of agriculture.

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PERCEPTIONS OF THE STUDENTS IN THE TOURISM SPECIALISATIONS REGARDING THE EFFECTIVENESS OF THE EDUCATIONAL PROCESS AND THEIR PREPARATION FOR THE TOURISM SECTOR

Geanina Brînză¹, Alexandru Anichiti² and Gina Ionela Butnaru²

^{1) 2)} Ștefan cel Mare University of Suceava, Romania

³⁾ Alexandru Ioan Cuza University of Iași, Romania

E-mail: brinza.geanina@gmail.com; E-mail: alexandruanichiti@gmail.com

E-mail: gina.butnaru@uaic.ro

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Abstract

Education is a social phenomenon based on the transmission of life experiences and knowledge from adult generations to younger people, useful skills for their integration into society. In the field of tourism, education determines the formation of communication skills, behaviour, general knowledge, entrepreneurial skills, for the people involved in the tourism sector. This paper empirically tests the perception of students from two faculties of Alexandru Ioan Cuza University of Iași and two faculties from Ștefan cel Mare University of Suceava regarding the effectiveness of the educational process, as well as their confidence regarding the perception of their success in the tourism sector.

Keywords

Education, tourism, affective commitment, tourism education, intention to continue studying.

JEL Classification

I20, C51, C52.

Introduction

Education in general and tourism education in particular are vital for the tourism sector, as they provide the market with skilled labour and train human resources in order to support the development of the tourism sectors (Malihah and Setiyorini, 2014). Education in the field of tourism is the education area which develops the knowledge, skills, and attitudes necessary for the successful management of tourism business (Vanevenhoven and Liguori, 2013). The economic development and the increasing needs of the society determine the increase of the demand for education in the field of tourism business management (Reddy,

2007). This study is intended to contribute to a better understanding of the concepts and relationships between the perception of effectiveness of the educational process and its effect on the perception of preparation for the tourism sector. The content of this paper is configured as follows: the first part is based on the scientific literature on tourism education, followed by the methodology and the presentation of the research methods, continuing with the section of discussions and conclusions which briefly present the main findings of the research and its limitations. The results obtained are of interest regarding the local problems of the community, especially because a study of this nature has not been conducted yet in the research area of Alexandru Ioan Cuza University in Iași (UAIC) and Ștefan cel Mare University in Suceava (USV).

Literature Review

Tourism education and its generated visions

The business sector with a high growth rate is the tourism sector (Holloway et al., 2009), which in turn attracts the need for specialised training by adequate education. The educational institution is expected to be an efficient space for study, creating a perception of the success of graduates who will be active in the tourism sector. Goodman and Sprague (1991) considered that the revision of the curriculum was necessary due to the increasing role of services in the world economy, and to the threat coming from the business schools focused on the tourism field. Later, Becton and Graetz (2001) analysed the accuracy with which the tour operators' needs were understood and satisfied by the specialized training programs. A survey of 46 tourism industry professionals in the United States showed an acceptable level of study programs for the tourism sector, and an acceptable correlation with employers' expectations (Lefever and Withiam, 1998). Contrary to Lefever and Withiam's research (1998) is the study conducted by Jauhari (2006), which evokes a gap between the competences offered by the education system in India and the needs of the tourism sector. Given the relevance of tourism education and the confidence of students in the educational process for the tourism sector, we formulated hypothesis **H1**: *There is a significant positive relationship between the students' perceived efficacy of the educational process and the perception of preparation for the tourism sector.*

The challenges of tourism education and the intention to continue studying

Tourism is a multidisciplinary academic field studying the emerging typologies and activities, proving to be a vibrant knowledge environment. Tourism is not only the largest industry, but also the most fascinating field of study (Hall, 2010). McNally and Irving (2010) argue that a decrease in students' motivation will lower their intention to continue studying, which may affect their level of success in the future. Based on the example given by the employees in a company, Ketchland and Strawser (1998) shows that "the more the employees are willing to continue to be members of the group, the higher the degree of identification of a person with the organisation and their willingness to contribute to achieving the goals of the organisation" and the intention to continue studying in the field of tourism can lead to success in this area. Therefore, we tested hypothesis **H2**: *The intention to continue studying has a positive influence on the perception regarding the education for tourism.*

The affective commitment, the perception of the effectiveness of the educational process and the intention to continue studying

According to Cownie (2019), universities should develop permanent relationships with students. The students' affective commitment towards the institution in which they study is useful in determining their loyalty or intention to continue studying (Ilban and Kaşlı, 2014). Affective commitment is defined by Meyer and Allen (1991) as "identifying with an

organisation, attachment and emotional involvement with it". It offers the highest benefits for an organization (Meyer and Maltin, 2010), it is associated with the highest performance in the workplace (Meyer et al., 2002), and demonstrated that employees could make additional efforts to identify with the company in which they are employed (Ambler and Barrow, 1996, Burmann et al., 2009). Commitment is a key factor involving loyalty and it is a broad and relevant concept in our studies, which determined us to propose the following hypotheses for our study: **H3:** *There is a significant positive impact of the affective commitment on the intention to continue studying;* **H4:** *There is a significant positive impact of the affective commitment on the perceived effectiveness of the educational process.*

Methodology

The research model proposed

The main objective of this study is to analyse the perception of the effectiveness of the educational process and its impact on the confidence of students in the tourism sector. Moreover, the specialised studies show that the affective commitment can have a positive effect on the perceived effectiveness of the educational process and of the intention to continue studying. Therefore, the proposed research model is based on the study conducted by Ilban and Kaşlı (2014):

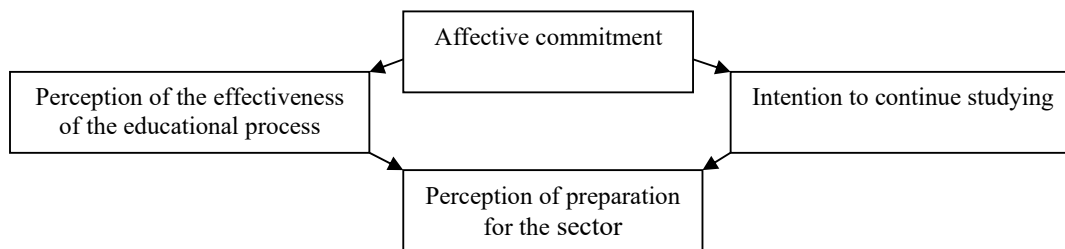


Fig. no. 1 The proposed research model

Source: the authors' elaboration after Ilban and Kaşlı, 2014

The selection and description of the variables

This model proposes to analyse four variables. The variable "affective commitment" is adapted according to Meyer and Allen (1991), and the variables "perception of the effectiveness of the educational environment, intention to continue studying, and perception of preparation for the tourism sector" have items adapted after Hacıoğlu et al. (2008) (cited by Ilban and Kaşlı, 2014):

- a) The variable **affective commitment (AFFC)** is a latent variable measured on the basis of six items, as follows: **1.** I would be very happy to spend the rest of my student career in this faculty; **2.** I feel like 'part of the family' at my faculty; **3.** I feel 'emotionally attached' to this faculty; **4.** I really feel as if the problems of the faculty are my own; **5.** I feel a strong sense of belonging to my faculty; **6.** This faculty has a great deal of personal meaning for me.
- b) The variable **perception of the effectiveness of the educational process (PEEP)** was measured using the next six items: **1.** I think there are sufficient areas for practice in the faculty; **2.** Modern educational tools are used in the faculty; **3.** Library services and access to scientific resources are sufficient and convenient; **4.** I think there is sufficient collaboration between the faculty and the tourism sector in order that graduates can be employed; **5.** The syllabus is suitable to meet the demand of tourism enterprises; **6.** There are sufficient tourism enterprises located nearby.
- c) The variable **intention to continue studying (ICS)** was measured on the basis of four items: **1.** I am going to faculty voluntarily and willingly; **2.** I felt bad when I couldn't go

to faculty; **3.** I am always thinking to continue studying and attending the lessons; **4.** The practical training offered at our faculty will enable us to find employment in tourism enterprises.

- d) The variable **perception of preparation for tourism sector (POP)** was measured on the basis of four items: **1.** I think I will be qualified to meet business demands after graduation; **2.** I think the education given at faculty improves my communication skills; **3.** I think I receive sufficient education on concepts related to tourism; **4.** The practical training offered at our faculty will enable us to find employment in tourism enterprises.

We measured all the research constructions using Likert scale with five-point items, from “total disagreement = 1” to “total agreement = 5”.

The sample

We used the quantitative method as research method, using as a data collection tool a questionnaire applied to students from the following specialisations: Economics of Commerce, Tourism and Services (ECTS) from the Faculty of Economics and Business Administration (FEBA) of Iași and from Bălți Extension of UAIC; Tourism Geography (TG) from the Faculty of Geography and Geology of Iași, ECTS and TG from USV, as well as Tourism and Hotel Management (THM) masters programs from FEBA of Iași and Tourism Management (TM) from FEBA of Bălți extension of the UAIC. We collected the data online through Google Drive between November 2019 and March 2020, we analysed them and statistically processed them using STATA version 13.0. The sample consists of 544 respondents, of which 423 (77.75%) were women, and the remaining 121 (22.25%) were men. Considering that the respondents are students, 499 (91.72%) are under 25 years old, the other 45 (8.28%) are between 25 and 40 years old, 46.69% of them are students in ECTS specialisation, 34.74% are students in the TG specialization, and the remaining 18.57% are students in the THM and TM specialisations.

Method of data analysis

We analysed the relationships between the affective commitment, the perception of the effectiveness of the educational process, the intention to continue studying, and the perception of the preparation for the tourism field, by modelling the structural equation (SEM):

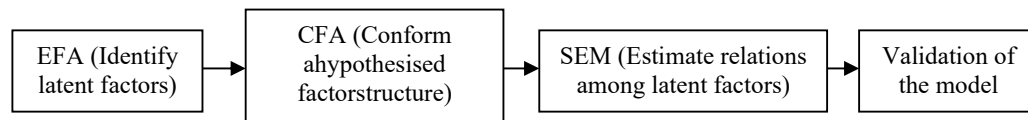


Fig. no. 2 SEM modelling design

Source: Dragan and Topolšek, 2014

Results and discussions

Measurement model

For the measurement scale, we performed first an exploratory factor analysis. We omitted some questions from the analysis on the grounds that they did not match the research hypotheses. In addition, we divided the questions belonging to the latent variable “perception of effectiveness of the educational process” into two dimensions: the facilities of the educational institution (**factor 1**), and the collaboration with the tourism companies (**factor 2**). Thus, **H1** becomes: **H1a:** *There is a significant positive relationship between the facilities of the higher education institution and the perception of preparation for the tourism sector;* **H2b:** *There is a significant positive relationship between collaboration with companies in the tourism sector and the perception of preparing students for the tourism*

sector. **H4** becomes: **H4a:** *There is a significant positive impact of the affective commitment on the perception of the facilities offered by the university;* **H4b:** *There is a significant positive impact of the affective commitment on the perception of collaboration with companies in the tourism sector.* The measurement model was estimated using Confirmatory Factor Analysis (CFA). We used goodness of fit measures to evaluate the overall model. As indicated in the study results, the general fit indices for the proposed model were acceptable, with χ^2 / df equal to 3.13, RMSEA of 0.063, comparative fit index of 0.930 and Tucker-Lewis index of 0.916. To measure the internal consistency of the indicators, we used Cronbach's Alpha score, whose range of variation is between 0 and 1. A scale is considered consistent if it has an index value above the minimum threshold of 0.7 and as close as possible to 1. For the sample analysed, Cronbach's Alpha records the following values: Affective commitment = 0.8758, Effectiveness perception of the educational process = 0.7888, Factor 1 = 0.7818, Collaboration with tourism companies = 0.7402, Intention to continue studying = 0.7741, Perception of preparation for the tourism sector = 0.7869. Therefore, latent variables have the minimum required consistency. Moreover, Average Variance Extracted (AVE), Construct Reliability (CR), Maximum Shared Variance (MSV), and Average Shared Variance (ASV) confirm the fit of the model (**Table no. 1**). AVE can be calculated according to the formula given by (Eq.1) (Hair et al., 2010).

$$AVE = \frac{1}{n} \times \sum_{i=1}^n L_i^2 (Eq.1)$$

where L_i is the standardised factor loading, and n is the number of items. The value of CR is calculated as the square sum of the standardised loading factors L_i for each construct and the sum of the error variation terms for a construct as shown in (Eq.2):

$$CR = \frac{(\sum_{i=1}^n L_i)^2}{(\sum_{i=1}^n L_i)^2 + (\sum_{i=1}^n e_i)} (Eq.2)$$

Table no. 1 Testing and validation of the variables

Dimensions	Variable	Std. loading	Cronbach Alpha	AVE	CR	MSV	ASV
Affective commitment (AFC)	AC1	0.65	0.8758	0.55	0.89	0.38	0.27
	AC2	0.71					
	AC3	0.81					
	AC4	0.65					
	AC5	0.83					
	AC6	0.78					
Perception of the effectiveness of the educational process (PEEP)			0.7888	0.53	0.86	0.33	0.20
<i>F1: Modern facilities</i>	MF1	0.78	0.7818	0.55	0.86	0.15	0.07
	MF2	0.67					
	MF3	0.77					
<i>F2: Collaboration with tourism companies</i>	COL1	0.82	0.7402	0.51	0.82	0.33	0.32
	COL2	0.65					
	COL3	0.68					
Intention to continue studying (ICS)	ICS1	0.73	0.7741	0.55	0.78	0.38	0.22
	ICS2	0.68					

	ICS3	0.81					
Perception of preparation for the tourism sector (POP)	EPT1	0.68	0.7869	0.50	0.79	0.33	0.14
	EPT2	0.74					
	EPT3	0.70					
	EPT4	0.70					

Source: the authors' own elaboration using the statistical analysis program STATA

Structural equation model: In the research model, we estimated that the affective commitment would influence the perception of the effectiveness of education and the intention to continue studying. Also, we stipulated that the perception of the preparation in the tourism sector is influenced by the intention to continue studying and by the perception of effectiveness of the educational process. The goodness-of-fit measures used to evaluate the overall structural model fit shown in **Table 2** are acceptable according to Schermelleh-Engel et al. (2003) and Vandenberg (2006).

Table no. 2 Goodness of fit results for the structural model

Fit statistics	Value	Fit statistics	Value
Chisquare/df	3.56	Comparative fit index (CFI)	0.915
p > chi ²	0.000	Tucker-Lewis (TLI)	0.900
RMSEA	0.69	Standardised root mean squared residual (SRMR)	0.063
		Coefficient of determination (CD)	0.904

Source: the authors' own elaboration using the statistical analysis program STATA

The findings related to **H1a** and **H1b** confirm that there is a significant positive relationship between the students' perceived effectiveness of the educational process and the perception of preparation for the tourism sector. These results also indicate that for the students the collaboration of the faculties with the tourism companies is more important than the facilities offered by these faculties (access to the library, modern means of teaching, etc.). **H2** confirms that the intention to continue studying and the perceived educational performance has a significant positive effect on the perception of the preparation for the tourism field. **H3** confirms that the affective commitment is positively associated with the intention to continue studying, the connection being also significant. **H4a** and **H4b** are also confirmed. These results are illustrated in **Table 3**, and the relationship between latent variables is shown in the final model presented in **Figure 3**.

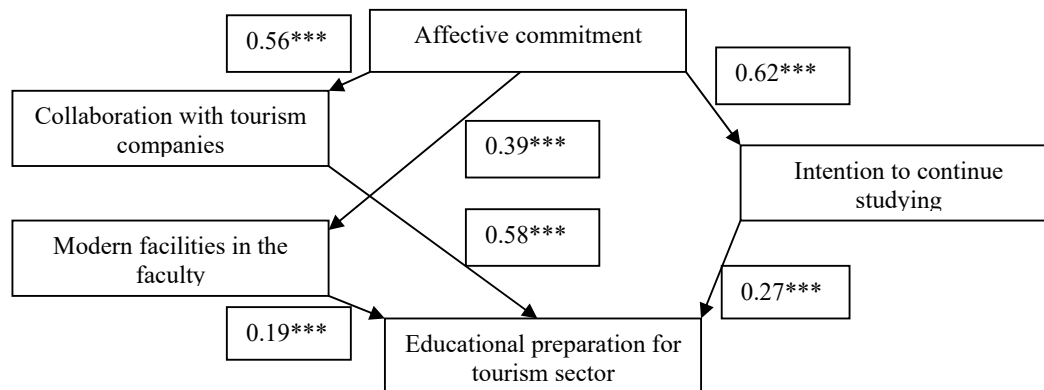


Fig. no. 3 Final model and results

Source: the authors' own elaboration using the statistical analysis program STATA

Table no. 3 Standardised path coefficients results

	Parameter estimates	
	Standardised path coefficients	Hypothesis supported
H1_a (F1 → (+) POP)	0.19 (0.001)***	YES
H1_b (F2 → (+) POP)	0.58 (0.000)***	YES
H2 (ICS → (+) POP)	0.27 (0.000)***	YES
H3 (AFFC → (+) ICS)	0.62 (0.000)***	YES
H4_a (AFFC → (+) F1)	0.39 (0.000)***	YES
H4_b (AFFC → (+) F2)	0.56 (0.000)***	YES

*** $p < 0.01$; Source: the authors' own elaboration using the statistical analysis program STATA

Conclusions

Tourism education can develop communication skills, behaviour, general knowledge, entrepreneurial skills for the people involved in this sector of activity. Tourism is perceived in Romania as being related to education, due to the fact that trips and camps are organised in schools, and international projects are developed through European funds, by which tourism information and knowledge is implemented involuntarily.

The present study is useful due to both theoretical and practical results, and because it offers a better understanding on how students in tourism programs (ECTS, TG, THM, and TM) from UAIC and USV perceive the effectiveness of the educational process and its impact on the perception of preparation to successfully operate in the tourism sector. The results of the study also show that for the students from these universities it is more important to collaborate with the tourism companies than the facilities offered by these faculties (access to the library, modern means of teaching, etc.). These results confirm the importance of public-private partnerships. Therefore, it can be concluded that the lack of collaboration between universities and tourism enterprises can lead to a lower level of perceived self-efficacy of students in the tourism specialisations.

In addition, the hypothesis that the affective commitment will increase the intention to continue studying is supported and the results are consistent with İlban and Kaşlı (2014). The affective commitment also has an impact on the students' perception of the effectiveness of the educational process, in this case indirectly, through the perception of preparation for the tourism sector.

All in all, this research offers an additional novelty and originality by studying the perceptions of young people studying in educational institutions in Romania. The variables mentioned above are the basis for a contribution to the field. Basically, the study objectively underlines the Romanian educational reality at the level of Alexandru Ioan Cuza University of Iași and Ștefan cel Mare University of Suceava.

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CORPORATE GOVERNANCE AND AUDIT PRACTICES, FIRM LEVEL INDICATORS. EVIDENCE FROM EMERGING EUROPE

Paula-Andreea Terinte¹

¹) "Alexandru Ioan Cuza" University of Iași, Romania

E-mail: paula.terinte@yahoo.ro

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Abstract

Using a sample of listed companies, for a ten-year period, from Central and Eastern European (CEE) countries, we aim to analyze corporate governance and audit practices at firm level through regression Probit model. In order to conduct the analysis we manually collected data from the Annual Reports of firms for our dataset regarding the corporate governance and audit characteristics. Data regarding the financial characteristics was collected from Obis database. We found, among other financial characteristics, that operation performance is associated with higher probability of formatting an independent internal audit committee. In addition, firms that have higher operation performance are more likely to be audited by a Big4 auditor and have lower probability in having CEO duality. Our results contribute to corporate practices by evidencing adoption, acceptance and diffusion of corporate governance codes and international audit standards in emerging Europe at firm level and by supporting driving value for businesses.

Keywords

Corporate Governance practices, Internal Audit practices, Emerging Europe, Performance

JEL Classification

M42; G34; G32

Introduction

Corporate governance and audit practices represent important factors that influence the performance and long-term development of companies. The corporate governance codes and audit standards provide international general framework of the best practices that are required in order to ensure high quality of corporate governance and audit practices. There are studies that found significant variation between countries regarding corporate governance practices at firm level (Gompers and Metrick, 2003; Klein et al. 2004). This suggests that corporate governance adoption has a voluntary choice. Studies that analyzed the voluntary choice of corporate governance adoption (Anand et al., 2006) suggest that companies voluntary

implement best practices of corporate governance in order to assure investors that their money are well invested and certifying that stakeholders and their role in product value is taken into consideration (Gnan et al., 2013).

Our research aims in evidencing adoption, acceptance and diffusion of corporate governance codes and audit standards in emerging Europe at firm level and provide valuable information regarding the corporate governance and audit practices and trends in the corporate sector.

Our paper is structured as follows: Section 1 is represented by the theoretical background regarding corporate governance and audit practices; section 2 provides the methodological design of the paper; section 3 provides results of our analysis and section 4 offers conclusions.

Literature review

Corporate governance varies across countries and firms, but there are common corporate governance codes (OECD, 2015) and audit practices (IIA, 2017) that are recommended for all countries and firms in order to assure high quality of corporate governance and audit practices. This paper's main goal is to deliver detailed descriptive analysis using firm level corporate governance and audit indicators in emerging countries in order to provide valuable information regarding the actual corporate governance and audit practices in CEE listed firms. Using a sample of Canadian firms (Anand et al., 2006) analyzed the voluntary choice of corporate governance adoption and found that companies voluntarily implement best practices of corporate governance in order to assure investors credibility and efficient resource management. Using a sample of 296 private non-bank Indian firms (Balasubramanian et al., 2009) created an index formatted by board independence and procedure, auditor independence and procedure stakeholder rights and other corporate governance characteristics in order to describe the corporate governance practices in India. They found that the most of the firms have board independence and don't have CEO duality. In addition, their results provide evidence that firms from India are more likely to have audit committee.

Di Miceli da Silveira A et al., 2009 analyzed the voluntary adoption of corporate governance best practices in listed Brazilian firms from 1998 to 2004 and investigated the firm-level corporate governance quality. Their results suggest that there are divergent level of adoption of corporate governance practices, also firm value and firm size is positively associated with corporate governance quality.

Chen, and Li, 2013 analyzed the voluntary adoption of corporate governance and audit practices using a 376 listed firms in Toronto Venture Exchange. Their results indicated that firms with low compliance costs and greater future financing needs are more likely to adopt the new current in corporate governance and audit practices, and this decision has a positive effect in increase firm value and a negative impact on company's cost of equity capital.

Groff and Valentincic, 2011, investigated the determinants of voluntary audit committee using a sample of 59 listed companies from Slovenia. Their result indicated that large firms that have large supervisory board and less financial debt are more likely in having audit committees. Gnan et al., 2013 using a sample of 37 Italian local public utilities, analyzed specific management tools used to improve corporate governance practices. Their results suggest that high quality of corporate governance is positively influenced by stakeholders 'role in product value. Adawi and Rwegasira, 2011, investigated corporate governance voluntary practices from UAE listed companies. Their results suggest that the primary factors that influence corporate governance practices are the firm size, the composition of the Board and experienced directors.

Data and Methodology

Our prime focus is to determine the corporate governance and audit practices of listed firms from CEE countries and to establish the adoption, acceptance, and diffusion of corporate governance principles and audit standards. In this regard, we used in our analysis data regarding listed firms from CEE countries, for 10 years period (2004-2013).

Our data consist in nine numerical variables representing the financial characteristics of firm retrieved from Orbis Database and five dummy variables that characterize the corporate governance and audit practices in accordance with corporate governance codes and audit standards (OECD, 2015; IIA, 2017), presented with the description in table no. 1.

Table no. 1 Variable description

Variable	Description
ROA	Return on assets, calculated as EBIDA divided by total assets
ROE	Return on equity, calculated as EBIDA divided by total equity
GR4	Level of indebtedness, calculated as total debt divided by total assets
CSR	Fixed assets turnover ratio, calculated as net sales divided by net assets.
ISR	Operating income margin, calculated as operating revenue divided by net sales
Liq	Liquidity ratio, calculated as logarithm of liquidity ratio
STK	Stocks, calculated as natural logarithm of stocks
Deb	Debtors, calculated as total liabilities divided by total assets
Size	Firm Size, calculated as natural logarithm of total assets
EAI	Dummy variable, coded 1 if there is an internal audit department and 0 otherwise
CDy	Dummy variable, coded 1 if there CEO duality and 0 otherwise
BoI	Dummy variable, coded 1 if there is an independent Board and 0 otherwise
IAI	Dummy variable, coded 1 if is an independent internal audit committee and 0 otherwise
BIG4	Dummy variable, coded 1 if the firm is audited by one of the Big4 auditors and 0 otherwise

Source: Authors calculation

The variables regarding financial characteristics are represented by the two measurements of performance return on assets (ROA) and return on equity (ROE) ratios. Other financial characteristics such as level of indebtedness (GR4), fixed assets turnover ratio (CSR), operating income margin (ISR), liquidity ratio (Liq), stocks (STK), debtors (Deb), firm size (Size) are in accordance with (Haniffa and Hudaib, 2006; Di Miceli da Silveira et al., 2009). The corporate governance and audit variables are manually collected from the Annual Reports of the companies. They are represented by the CEO duality (CDy), independent Board members (BoI), existence of internal audit department (EAI), independent internal audit committees (IAI) and if the firm is audited by one of the Big4 auditors (that represents the first 4 audit large companies) in accordance with studies as (Balasubramanian et al., 2009; Bello, 2011). Our data set is represented by an unbalanced panel data as per Table no.2.

As Table no.2 suggests that our dataset varies from 894 firm observation to 1086 firm observation. This is because of the lack of accessing some Annual Reports of the companies that prevented us in collecting more year observation data for our dummy variables.

Table no. 2 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	1074	0.0715238	0.0941767	-0.2830552	0.3820774
ROE	905	0.2858975	0.321261	-1.277315	1.611582
GR4	1074	0.4669333	0.2375407	0.0777551	1.295112
CSR	1071	0.643167	0.7425013	0.0007269	5.125108
ISR	1071	1.020295	0.0339705	0.9381715	1.208305
Liq	1053	1.074252	0.7633814	0.142	4.327
STK	1047	10.40814	1.47493	1.085106	15.11992
Deb	1059	10.75236	1.513308	1.881205	14.50547
Size	1074	12.7882	1.391387	7.712307	17.04631
EAI	900	0.7744444	0.41818	0	1
CDy	901	0.0688124	0.2532755	0	1
BoI	895	0.8536313	0.3536731	0	1
IAI	894	0.5369128	0.4989147	0	1
BIG4	1086	0.6906077	0.4624561	0	1

Source: Authors calculation

We tested if there are correlation problems between our variables by employing Person correlation matrix, presented in Figure no. 1

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) ROA	1.00													
(2) ROE	0.45***	1.00												
(3) ISR	-0.02	0.01	1.00											
(4) GR4	-0.35***	0.15***	-0.06*	1.00										
(5) CSR	-0.17***	-0.13***	0.36***	-0.23***	1.00									
(6) Liq	0.25***	-0.06*	0.02	-0.51***	-0.03	1.00								
(7) STK	0.09***	0.01	-0.01	-0.04	-0.08***	-0.02	1.00							
(8) Deb	0.09***	-0.01	-0.12***	-0.06*	0.01	0.11***	0.56***	1.00						
(9) Size	0.09***	-0.05	-0.01	-0.33***	0.34***	0.15***	0.62***	0.74***	1.00					
(10) EAI	0.05	0.08**	-0.03	-0.11***	0.03	0.02	-0.01	0.06*	0.14***	1.00				
(11) CDy	-0.17***	-0.11***	0.14***	-0.04	0.07**	-0.09**	-0.09***	-0.18***	-0.23***	0.04	1.00			
(12) BoI	0.09***	0.05	-0.11***	0.04	-0.06*	0.05	0.09***	0.15***	0.19***	-0.02	-0.66***	1.00		
(13) IAI	0.08**	0.18***	-0.01	-0.01	0.12***	0.00	-0.01	0.10***	0.11***	0.57***	0.08**	-0.01	1.00	
(14) BIG4	0.18***	0.03	-0.07**	-0.21***	0.04	0.22***	0.13***	0.19***	0.29***	0.32***	-0.08**	-0.01	0.25***	1.0

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Fig. no. 1 Correlation Matrix

Source: Authors calculation

As Person Correlation Matrix suggests, there is no correlation problems between our variables as the largest correlation is between the variable Size and Deb of 0.74.

In order to eliminate the estimation risks, induced by the presence of outlier we used winsorize (Duru et al., 2016). We also employed additional sensitivity and robustness tests and we concluded that there is no multicollinearity issues and our data is robust. In order estimate the relation between financial characteristics of firms and particular corporate governance and audit practices, we employed Probit model in accordance with (Dopuch et al., 1987; Hosmer and Lemeshow, 2000; Groff and Valentincic 2011). Our Probit equation becomes:

$$VCGA_i(Prob. dummy variable = 1) = \beta_1 PrV_i + \beta_2 VFCh_i + \alpha_i + \varepsilon_i \quad (1)$$

where:

VCGA – represents the variables regarding corporate governance and audit characteristics;

PrV – represents the variables regarding the accounting performance (ROA and ROE);

VFCh – represents the variables regarding the financial characteristics of firms;

i – represents the company;

α_i – constant;

ε_i – idiosyncratic error

Results

In our analysis, we estimated the model for every dummy variable regarding corporate governance and audit characteristics and we used cluster robust estimators. The results of our model are presented in table no. 3.

Table no. 3 Results of Probit Regression

	EAI	IAI	BoI	CDy	Big4
ROA 	-0.125 (-0.14)	1.216 (1.52)	1.100 (1.14)	-5.354*** (-3.93)	1.481** (1.98)
ROE 	0.463** (2.14)	0.771** (3.35)	-0.023 (-0.09)	0.171 (0.56)	-0.034 (-0.19)
GR4 	-1.350*** (-3.84)	-0.082 (-0.26)	1.543*** (3.76)	-3.563*** (-5.79)	-0.101 (-0.34)
CSR 	-0.409** (-3.13)	0.159 (1.50)	-0.530** (-3.24)	0.501** (2.20)	-0.162 (1.58)
ISR 	-0.984 (-0.53)	0.071 (.04)	-3.558* (-1.74)	2.863 (0.98)	-3.831** (2.31)
Liq 	-0.241** (-2.97)	-0.037 (-0.51)	0.359** (3.13)	-0.462** (-2.44)	0.415*** (3.97)
STK 	-0.223*** (-3.51)	-0.101** (-2.11)	-0.209** (-2.98)	0.320** (2.83)	0.042 (0.87)
Deb 	-0.169** (-2.27)	-0.042 (-0.75)	-0.345*** (-3.58)	0.535** (3.44)	-0.87** (-3.39)
Size 	0.499*** (4.73)	0.217** (2.73)	0.812*** (6.23)	-1.399*** (-6.30)	0.454*** (5.58)
Const	0.559 (0.28)	-1.568 (-0.86)	-0.654 (-0.31)	6.175** (1.88)	0.018 (0.01)
No. obs	721	718	716	722	716
LR chi2(9)	75.49	58.21	80.74	125.54	80.74
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R2	0.0970	0.0589	0.1314	0.3314	0.1314
Log likelihood	-351.279	-465.347	-266.764	-126.658	-266.764

Source: Authors calculation

Our results are consistent with (Groff and Valentincic, 2011), in which large firms that perform better in terms of ROE are more likely to have a voluntary independent internal audit department. Furthermore, our results suggest that firms from Central and Eastern Europe that have high level of indebtedness (GR4), fixed assets turnover ratio (CSR), liquidity ratio (Liq), stocks (STK), and debtors (Deb) are less likely to have an internal audit department in their structure.

Large firms with higher liquidity ratio and high level of indebtedness have a higher probability in having an independent Board. On the other hand, high fixed assets turnover ratio, stocks and debtors position firms in higher probability of having CEO duality but large firms that perform better in terms of ROA, have higher liquidity and high level of indebtedness are less likely in having CEO duality.

Large firms that perform better in terms of ROA and with higher liquidity have a higher probability in being audited by a Big4 auditor.

Conclusions

This paper investigates the corporate governance and audit practices in listed firms from Central and Eastern European countries. In order to establish the adoption, acceptance, and diffusion of corporate governance codes and audit practices, we used Probit model. By analyzing 80 firms for 10-year period, we found that firms that perform better in terms of ROE have higher probability in having an independent internal audit committee. Firms that perform better in terms of ROA present a higher probability in being audited by a Big4 auditor and are less likely in having executive dual position (CEO duality).

We consider that the separation of power between management and administration, assuring independent internal audit committee and ensuring the independence of the board of directors are elements that contribute to better operational performance of companies through efficient management and could ensure long-term development.

Our main limitation of the paper consists in the lack of accessing more data regarding the corporate governance and audit characteristics of firm that restricted us to a limited dataset. As additional data will be available, further research will be conducted.

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WHAT IS THE COST OF RAISING A CHILD?

**Valeria Vannoni¹, Adriana Manolică², Teodora Roman³
and Gabriela Boldureanu⁴**

¹⁾ *Università degli Studi di Perugia, Italy*

^{2) 3) 4)} *Alexandru Ioan Cuza University, Iași, Romania*

E-mail: valeria.vannoni@unipg.it; E-mail: manolica@uaic.ro

E-mail: throman@uaic.ro; E-mail: gabrivaleanu@yahoo.com

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Abstract

What are the expenses in raising a child? Or more children? Those are the questions that started this research, which entails the analysis of the budget distribution issue in relation to family expenses from the parent's point of view – buyers of products for the whole family. The chosen research issue for this study is represented by the analysis of the structure of the expenses budget of families with 1 to 3 children aged between 0 and 14 years as well as determining the average expenses dedicated to children in the family budget. For this, we constructed through the quota method, a sample of 60 families supporting children aged 0 to 14. During the period of 3 consecutive months (November 2019 – January 2020) these families put all their expenses in a daily journal meant to record them based on different categories and sub-categories.

The data analysis comparatively presents the main types of expenses destined strictly for children.

Keywords

Household Budgeting, Household Resource Allocation, Childhood Studies.

JEL Classification

D10, D14, D19, G50, L67

Introduction

Family as a concept, has a considerable influence over the consumer behavior of its members. For children, family is the first group in which they discover the utility and value of money (Hillen and Lavarda, 2019). It is the normative group of reference which influences the general principles system with a large appliance spectrum (Chala et al., 2016). Also, through family, the child has his initial and initiatory encounter with the product (Stearns, 2010); it is the first environment in which the child tests the product and discovers its utilities and consumption principles and requirements (Lopez and Rodriguez, 2018). For example: edibles

that are comprised in a healthy diet, the adequate apparel chosen according to the occasion, where and how to do shopping etc.

The adoption process of the purchasing decision in regards to family, can differ in many aspects from the method in which this process runs its course for an individual (Marshall, 2010). Most often, the products are acquired by individuals in order to be utilized by the entire family (Vincent and Maxwell, 2016). But this involves a complex process, implying multiple roles and actors, starting from identifying the need for the product that is to be bought, continuing to the selection of the type and brand of the product, all the way to choosing the shop itself and the method and moment the product will be used and lastly the individual that makes the purchase. Not everybody evaluate the product following the same characteristics. Parents influence the socialization process of the children, both directly and indirectly (Cook, 2008). They seek to pass on to their children their own values and principles (Kalwij and Salverda, 2007) about consumption („You will learn the value of money!”). Also, parents decide the measure in which children can get in touch with other information sources such as television, sales people or friends (Kennedy, 2002). The socio-cultural tradition in regards to involving children in the purchasing decision process influences the moment and method of coaching from the parents to their children (Chaudhary, 2018), for the role of consumer and buyer (Brandrup and Mance, 2011).

On the other hand, the influence of children over the purchasing-adult is encompassed in the socialization-process of the consumer (Alanen, 1999; Buckingham, 2011). Thus they gain the abilities, knowledge and attitudes of future buyer even in their first years of life (Buckingham and Tingstad, 2017). To this process, friends or professors can later contribute (Kenway and Bullen, 2001), although the first two socialization sources, according to their importance, are family and mass-media (Jacobson, 2004). For example, the children tell one another about certain products consumed by the family or seen in TV advertising (Mulin, 2014), and this tendency increases with age (Pilcher, 2013; Hawkins, 2016).

The consumption model and the consumption itself of the family synchronously and diachronically varies from one family to another (Lareau, 2003) according to social-economic and cultural determinations of the time in question (Dominick et al., 2018) and to be able to measure it at a population scale, the Quality of Life Research Institute uses the equivalent per-adult consumption. The consumption values start from the needs of an active adult, for which the value 1 is allotted; 0,9 – expenses for the second adult (the wife); 0,7 – expenses for the first child and 0,5 for the second child. Thus, the standard family composed of 2 adults and 2 children sums up 3.1 points.

Methodology

The present longitudinal analysis represents a quantitative research with a descriptive purpose over expenses dedicated to children as a component in the family expenses budget. For this, a sample of 60 families composed of both parents (active workers) and 1 to 3 children aged 0 to 14.

Research goal:

- Studying the variation of expenses made for the benefit of the children in different types of families, in relation to the number and age of the children.
- Studying the variation of expenses made for the benefit of the children during the holidays (such as Christmas) during which, children receive many gifts.

The research problem: The analysis of the structure of the family expense budget of families with 1 – 3 children aged 0 - 14 as well as the determination of the average expenses dedicated to children in the family expense budget.

Research Objectives:

O1. Determining the average of different types of expenses in the family expense budget of families with children aged 0 – 14, monthly (during November 2019 – January 2020), by types of families differentiated by the number and age of the children:

O1.1 – Determining the average expenses dedicated to children in the family budget studied over the 3 months of monitoring, for families with children aged 0-14;

O1.2 – Determining the average expenses of the family, influenced by children in the family expense budget, over the 3 months of monitoring

O1.3 – Determining the average expenses of the family, not influenced by children in the family expense budget, over the 3 months of monitoring

O1.4 – Determining the average expenses dedicated just for the parents in the family expense budget over the 3 months of monitoring

O2. Comparison of the average sums and average means related to expenses dedicated to children in the family expense budget for families of children aged 0 – 14, according to how many they have:

O2.1– Comparison of average expenses dedicated to children in the family expenses budget, according to how many children there are

O2.2 – Comparison of average expenses dedicated to children in the family expenses budget, according to the children's age

Research Hypothesis

H1. The average expenses dedicated to children aged 0 to 14 in the family expenses budget varies according to the number of children supported (Dominick at al, 2018; Hillen and Lavarda, 2019).

H2. All the expenses strictly dedicated to children and those influenced by children, have a greater average in the total family expenses budget (Dominick at al, 2018; Hillen and Lavarda, 2019).

H3. The expenses strictly dedicated to children in the family expenses budget varies according to the age of the children 0 – 14 years old (Dominick at al, 2018; Hillen and Lavarda, 2019).

Research Method:

The present study was carried out in the form of a panel survey with daily record in the expenses journal and with weekly reporting through online interviews with the persons responsible for the administration of the expenditure budget in each family. We opted for the longitudinal panel type survey also due to the fact that it was desired to observe the social phenomenon of consumption as it occurs naturally in the family, without being influenced by the presence of the human operator. We considered that recording the expenses of the families during the period November - January it can be better presented how the children influence the family expenses budget, rather than in other months.

Research Operationalization:

The sample of 60 families was selected on the basis of a snowball type method that started from an initial number of 15 families from the same city (Iași, Romania). The validation of their participation in the studio was done on the basis of a selection questionnaire, meant to filter exactly the family profiles sought after. Basically, when completing the selection questionnaire, the respondent was asked to agree to participate in the research and was told the responsibilities that they have during the course. If the acceptance for inclusion in the research sample was received, the contact details were requested in order to communicate the method of completion of the Daily Shopping Journal and the planning of the online interviews of each week.

Each family has completed an electronic log of the expenses incurred daily according to the pre-defined categories and subcategories of expenses, as follows:

Table no. 1 Daily log of the expenses incurred by each family by categories and subcategories of expenses

Date: ____	Expenses only for the consumption of children	Expenses for family consumption, influenced by children	Expenses for family consumption, not influenced by children	Expenses only for the consumption of parents
Food				
Apparel/Footwear				
Maintenance of the house				
Endowment of the house				
Transport				
Hygiene/Cosmetics				
Education				
Health				
Spare time				

Source: data from our own research.

Given that one of the major shortcomings of the panel-based survey is the fairly high dropout rate of the families included in the study, we planned weekly online interviews / meetings with each representative to maintain a close connection with the monitored families and to eliminate any errors of registration.

Table no. 2 The schedule of weekly interviews with each family included in the study

Scheduled Date	Time Range	Family (code)	Interview Date	Delay cause

Source: data from our own research.

The interviews were conducted in the form of electronic meetings whose duration did not exceed 10 minutes. They had the purpose of maintaining a closer connection with the respondents (representatives of the families included in the survey) for the following purposes: to reduce as much as possible the dropout rate (one of the big problems that arise in the development of such surveys); to decrease the frequency of registration omissions; to reduce the number of errors generated by the incorrect classification of a purchase into a category or subcategory of the indicated ones; to collect daily logs of expenses grouped by weeks, from each family included in the survey.

In the three-month monitoring period, the atypical consumer situation related to the offer of Christmas presents appeared (December 25). In this regard, during the interview conducted between November 1 and 3, 2019 (the first week of the study), we asked all families if they

are Christians to make sure that there are no differences between the external factors that influence the consumption of the families included in the research.

Data Processing

For data processing we used a series of descriptive and inferential statistical procedures. The descriptive statistical indicator used in the study is the mean, calculated separately by types of expenses, by calendar months and by types of families. Testing the differences between the average expenses for the studied groups was performed using the ANOVA procedure. ANOVA is a statistical method that allows the comparison of several populations and consists of testing the differences between the averages of the studied populations. The test statistic used is the Fisher Test, calculated as the ratio between the intergroup and the intra-group variance. Within the sample of studied families, respecting the national distribution of families according to the number of children, we recorded the related expenses of 105 children: 31 in the range 0-3 years; 35 in the range of 3-7 years and 39 in the range of 7-14 years.

For the sample of 60 families we applied the family structure in Romania according to the number of children (according to Eurostat), and the results are as follows: 52% - families with 1 child, 37% - families with 2 children and 11% - families with 3 children or more. Criteria based on which families included in the panel were selected: number of children supported, age of children, occupational status of parents, residence in Iasi, marital status (to be established on the basis of marriage), daily access to the Internet, the person responsible for being the one that manages the family's spending budget.

Findings

Analysis of differences in expenses dedicated to children, between families with one, two or three children

The average values of expenses made only for children in November 2019 are the highest for families with two children compared to families with one or three children. In order to verify if the differences regarding the level of the expenses dedicated to the children are significant between the three types of families, we applied the ANOVA procedure, separately, monthly, with the help of the SPSS program. We tested the equality of average expenses (null hypothesis) dedicated to children for three populations (families with 1, 2 and 3 children) in each month of the observation period (November 2019, December 2019 and January 2020). The calculated value of Test F is lower than the threshold value for each of the three months, which leads us to accept the null hypothesis of equal average spending for the three types of families. Therefore hypothesis 1, according to which the average of the expenses dedicated to children between 0 and 14 years in the family expenses budget varies according to the number of children supported is not confirmed.

Analysis of differences in expenses on children over time

The analysis of the expenses recorded daily by each family included in the survey reveals that, regardless of the age and the number of children in the family, the total amount spent on average by each family with children increases in December compared to November, so that in January they can register a sudden decrease.

Table no. 3 Variation of the average amount spent only for children according to the family composition in the months of monitoring

Family Type	November Expenses	December Expenses	January Expenses
Families with 1 child	1816	1958	1383
Families with 2 children	1856	2048	1465
Families with 3 children	1562	2093	1471

Source: data from our own research.

We can deduce from this graph that in December, regardless of the number of dependent children, the average value of the expenses incurred for their benefit is higher than in the other months of monitoring. This fact is determined by the fact that the month of December, nicknamed the "gift month", is characterized by a significant change in the consumption behavior of parents resulting in an increase of the volume of purchases made for children.

In order to compare the average expenses for the children per month, the ANOVA procedure was applied for each type of family (with 1, 2 and 3 children respectively). The calculated value of Test F is higher than the threshold value, respectively Sig. F is lower than the assumed risk ($\alpha = 0.05$), which leads us to reject the null hypothesis of equal average expenses for the three months for all types of families.

For the category "expenses for family consumption, influenced by children", the average expenses for January are significantly lower than for December, but do not differ significantly from those incurred in November. We observe a similar behavior in November and December regarding family consumption, influenced by children. In the case of the variable "expenses only for the consumption of parents", the average values are significantly lower in January than in November and December. It is found that in the case of the average of expenses only for the consumption of parents in the family expenses budget, there are significant differences only between January and November (but January does not differ significantly from December and November does not differ significantly from December).

Analysis of the average of other categories of expenses in the total family consumption expenses budget

Analyzing the average of the four major categories of expenses considered in the study, we found that the family spending budget is balanced, each of them having an approximately constant percentage over time. Differences between families according to the number of children refer mainly to the category of family expenses, influenced by children.

If the average mean for the three months of monitoring in the case of consumption influenced by children registers in the case of families with a child the value of 29.79%, this slightly decreases in the case of families with two children, but it is 5.56% lower in the case families with three children. We can consider that this variation is due primarily to the fact that the first child generates the largest changes in family consumption (only entering the "full nest" stage).

Analysis of the structure of the expenses dedicated to the children according to the age of the child / children supported

In children over 6 years old, we considered the purchase of toys as "spare time" items, while in the younger, toys were included in the "education" category because games are the main learning activity until the school period. It can be seen that education is the main destination of the expenses registered for the benefit of the children, seconded by the subcategory of food and followed by apparel-footwear. We note that the subcategory "food" in the age range of 0

- 2.99 has the lowest weight compared to the other age ranges, but the differences between them are not large.

Small differences also occur in the case of the "spare time" subcategory between the three age ranges: 3.44% average in the family expense budget (for the 0 - 2.99 years range), 4.19% for the age range of 3 - 6.99 years and 0.04% more for children between 7 and 13.99 years. The "transport" and "house endowment" subcategories have very low averages in total spending regardless of the age ranges of the children since most of them are included in the similar subcategories of family consumption, influenced. It is understood that most of the expenses of transporting or equipping the house are not strictly dedicated to children, but benefit the whole family from them.

Research Limitations

The influence of the child on the consumption expenditures of families with children under the age of 14 years cannot be measured very precisely since its level varies from one family to another, being a subjective element (correlated with the value system promoted within the family). The harmonization of the family program with the scheduling for the weekly interview of expenses reporting has caused that during the research there are situations of postponing the weekly interviews (on average, between 1 and 5 cases / week), even with a week for various reasons: illness to a child or even the respondent, school holidays - especially around Christmas.

Conclusions

We could find that in the structure of expenses made for the benefit of children, the most important averages are education, food and expenses for apparel-footwear, regardless of the number of children in the care of the family and their age. Even though in establishing the 4 types of expenses we considered a category called "family consumption, not influenced by children", most parents stated that, with the appearance of the first child, they pay more attention to the foods they buy for several reasons:

- Breastfeeding women should avoid certain foods because their consumption can cause health problems for their children.
- The desire to determine the child / children to adopt a healthy eating style, etc.

The highest average values of expenses made only for children in the case of families with two children compared with families with one or three children are recorded in November 2019 and not in December, as we would have expected.

The analysis of the expenses recorded daily reveals that, regardless of the age and the number of children in the family, the total amount spent on average by each family with children increases in December compared to November, so that in January they can register a sudden decrease. Compared to the other categories of families, in the case of families with three children, the average level of spending on children is higher not only in December but also in January. Looking at the entire research approach after its completion we can confidently state that:

- The average of expenses for children aged 0-14 in the family expenses budget varies depending on the number of children supported.;
- The total of the expenses dedicated strictly to the children and those influenced by the children holds a majority average in the total budget of the family's expenses;
- The average of expenses intended strictly for children in the family budget varies according to the age of the children (between 0 and 14 years).

Therefore, without comparing the structure of family expenses before the appearance of children with that of the "full nest" we can say without hesitation that expenses (direct or indirect) made for the benefit of children are a basic component of the family budget.

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THE PROFILE OF THE ORGANIC FOOD CONSUMER IN ROMANIA: A REVIEW

Mihai Stoica¹

¹The Bucharest University of Economic Studies, Romania

E-mail: mihai.stoica.91@gmail.com

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Abstract

This paper reports on the latest contributions of research on organic food consumers in Romania. In order to summarize and systematize the information gained in the last years, it was advisable to make a short literature review on this topic. Subsequently, using only the contributions that investigate the Romanian market, an analysis was performed to synthesize the observed results. Based on the information collected, the consumer profile was defined according to the demographic, socioeconomic, psychographic and behavioral characteristics. In this regard, it was noted that the specialists' concern was especially to research the demographic and behavioral characteristics. Following this analysis, the Romanian consumer is between the ages of 35-45, is a woman rather than a man, with an above-average income and with higher education. He has an active life, he tries to strike a balance between family and professional life, and he takes care of his health. In general, he buys basic products, wholemeal or less processed, usually from hypermarkets/supermarkets and specialized stores. The article ends with highlighting the gaps noted in the research up to this moment and with proposals for future research on this topic

Keywords

green marketing, green consumer profile, organic food, Romanian market

JEL Classification

M31, D12

Introduction

The marketing of the future needs to pay greater attention to research for sustainable consumption, as a result of the consumer's increasing desire for pure, non-counterfeit and sustainable products. These products are designed to be in harmony with nature and are the guarantee for a healthier lifestyle, without forgetting about taking care of the environment. From a niche market to a mainstream industry, the organic market is constantly growing (Willer and Lernoud, 2019), thus having a significant economic and social impact. However, the consumption of organic products is still at a low level (12.2 euros per capita worldwide, in 2017) (Willer and Lernoud, 2019) with a significant gap between countries.

A decrease in this gap can be achieved through a series of actions pointed toward the potential consumers of organic products. Identifying and understanding the organic consumer's profile represents an essential point in the development of this sector (Toma et al., 2017). Also, knowing the distinct characteristics and dimensions of the consumption segments can help companies to design an appropriate offer and determine the most appropriate way to educate and persuade consumers to change their consumption behavior (Yilmazsoy et al., 2015).

The consumer of organic food

The green consumer is generally defined as one who adopts environmentally friendly behaviors and/or who purchases green products over the standard alternatives (Boztepe, 2012). Green consumers seem to become a driving force behind how companies do business, and they are creating a new economy (Papadopoulos et al., 2010).

The researchers have investigated numerous questions related to the consumption of organic food, including the evaluation of consumers' characteristics and the development of a profile for the typical consumer. The first studies revealed that green consumers are middle-aged women, with a high level of education and economic status above average. Subsequently, the conducted research has not always yielded robustly indicative results, and the results produced in one study have been often contradicted in another (do Paco and Raposo, 2009).

In order to identify and characterize green consumers, the use of demographic and socio-economic criteria is attractive because it provides an easy and useful method for segmenting consumer groups and allows researchers to better understand the profile of a particular group of individuals (Royne et al., 2016). The demographic characteristics most often included in the researches are age, gender, education and income, which are important for understanding and modeling the profile of organic products' consumers (do Paco and Raposo, 2009). Such variables, when significant, provide effective ways for companies to segment the market and capitalize on attitudes and behavior towards organic products (Awad, 2011).

Socio-demographic variables can be used, to some extent, to achieve the profile of consumers, but they are not sufficient to form a precise profile of the green consumer (Diamantopoulos, et al., 2003). Straughan and Roberts (1999) found that psychographic criteria are more effective than demographic criteria for explaining variation in consumers' behavior concerning environmental conservation. Psychographic variables have been highly effective in characterizing the green consumer (Mostafa, 2009; Awad, 2011). Lifestyle, personality and values are most often used to outline the psychological profile of the green consumer.

Often, the psychographic profile is analyzed separately from the behavioral profile (Straughan and Roberts, 1999; do Paço and Raposo, 2009; Banytè et al., 2010), although they are very similar. The particularities of the consumer's behavior are closely related to their psychological characteristics, which has an impact on their purchase reasons and other variables (Banytè et al., 2010). Frequently, the attitudes, knowledge, reasons for buying/not buying, benefits, brand loyalty, etc. are analyzed (do Paço and Raposo, 2009).

Consumption of organic food in Romania

Sales of organic food were €41 million, but this figure is valid for 2016 (Willer and Lernoud, 2019). Unofficial data, based on industry sources, shows that organic food sales in 2018 reached \$65 million (Dobrescu, 2019). In terms of total retail trade, sales of organic products represent about 1% of the total market (Toma, 2015; Dobrescu, 2019).

The level of consumption regarding organic food in Romania is low compared to other European countries. In the EU countries the average consumption of organic food is 67 euros per capita, while at the European level is 47 euros, in 2017. Also, the individual consumption in Europe has reached values over 200 euros/inhabitant in four countries. The average consumption in Romania is two euros per capita (FiBL, 2019; Willer and Lernoud, 2019).

Drăghici et al. (2016) consider that the dynamics of the organic market in Romania is moderate and restricted by economic, social and even by political factors. Thus, the small number of consumers with a strong purchasing and consumption behavior-oriented in this direction and also, the existence of different consumption preferences and habits among them, determine difficulties in shaping a general profile for the consumer of organic products.

Methodology

The objective of this paper is to outline the typical consumer profile of organic food in Romania. The volume of researches in the direction of understanding the green consumer and identifying their characteristics has increased in recent years.

The paper is based on secondary data sources, namely the literature on the buying and consumption behavior. There has been a wide and interdisciplinary search on researches concerning organic farming and the organic food market in Romania, published in the last 15 years. 16 studies were selected based on their relevance to the research topic (see Table no. 1). The analysis focused on defining the characteristics of Romanian green consumer based on demographic, socioeconomic, psychographic and behavioral profiles.

Table no. 1 Research regarding the consumer of organic food in Romania

Reference	Year	Method	Purpose
Stănculescu and Marin	2008	Survey: 1165 respondents from all urban areas	the green typology of the urban population
Dumea	2012	Survey: 110 respondents (convenience sample)	factors that influence purchase decision
Pagalea and Uta	2012	Survey	the importance of lifestyle variables and impact on purchase behavior
Bozga	2015	Survey: 1000 respondents, nationwide for urban areas	buying behavior and consumption of organic products
Petrescu and Petrescu-Mag	2015	Survey: 420 respondents from the NW Region	consumers' perceptions of organic food
Roman, et al.	2015	Survey: 150 respondents	green consumption of consumers
Voicu and Iliescu	2015	Survey: 385 respondents from Bucharest	consumers attitudes concerning organic food
Voinea, et al.	2015	Survey: 62 respondents	consumers' perceptions
Draghici et al.	2016	Survey: 1300 respondents from Bucharest	factors that influence the consumers' behavior
Vietoris et al.	2016	Survey: 350 respondents (several cities)	consumer preference and buying behavior
Oroian et al.	2017	Survey: 540 respondents from the NW Region	consumers' perceptions towards organic food products
Petrescu et al.	2017	Survey: 420 respondents from the NW Region	consumer profile of organic food based on behavioral characteristics
Roșca and Tănase	2017	Secondary data analysis	the profile evolution of the persons with a healthy lifestyle
Sandu	2017	Survey: 182 respondents from Iași city	consumer psychology profile of organic food products
Ceylan et al.	2018	Survey: 53 respondents from Timișoara city	consumer preferences on consumption
Dabija et al.	2018	Survey: 3400 respondents from three regions	'green' loyalty towards retail formats

Source: Developed by the author

Results: Profile of organic food consumer in Romania

Demographic and socio-economic profile

Age. Most studies indicate that people between the ages of 35 - 45 are the most representative for the organic food consumer. Thus, Petrescu and Petrescu-Mag (2015) observed that people between the ages of 36 and 45 have the strongest beliefs regarding the ability of organic food to protect the environment and their health benefits, while the youngest group (18-25 years) has the weakest beliefs about these two benefits. However, other specialists (Draghici et al., 2016) consider from another perspective the degree of involvement of young people. On the one hand, people between the ages of 18 and 24 are more curious and open to trying new things, and on the other hand, they are the most financially constrained, which is the main reason why they are in a percentage high in the non-consumer group.

Gender. Most studies demonstrated that women have a greater predilection for the purchase and the consumption of organic food. Oroian et al. (2017) observed that the group of “environmentally concerned” consumers is made up of the largest number of women, compared to the other two groups resulting from the research carried out. In fact, women are considered the main caretaker of the family, being responsible for food purchases and usually willing to pay more for premium products. Along the same lines, there are also the opinions of Pagalea and Uta (2012), who concluded that women are more likely to buy organic food due to their interest in work, family, and food. Dabija et al. (2018) place these results on the fact that women spend more time shopping and carry out more careful planning compared to men. Also, women pay more attention to certain types of ecological behavior, which means they are more inclined to adopt ecological purchasing behavior (Roman, et al., 2015).

Education. People with higher education are the most likely to buy organic products at least to try them (Pagalea and Uta, 2012). However, due to the fact that they usually have a certain social status, this aspect allows them to consolidate such behavior. The results of a study (Petrescu and Petrescu-Mag, 2015) show that higher-educated subjects perceive organic food as fashionable and, at the same time, have less trust in the environmental benefits of organic food (compared with people with less education). Also, Stănculescu and Marin (2008) found that in the case of the four identified eco-types of consumers, the level of education plays a significant role, as opposed to the gender or age of the individuals.

Income. Regarding the impact of the economic situation on the consumption of organic food, Ceylan et al. (2018) found that there is a considerable effect. Thus, it has been found that with the increase of the level of income, consumers could accept a price up to 10 to 20% higher for organic food, compared to conventional products. This confirms that most consumers would be willing to buy and consume more organic products if their income increased.

Psychographic profile

Psychological factors help to a more efficient segmentation of green consumers (Sandu, 2017), which leads to a more precise definition of their profile. Pagalea and Uta (2012) say that lifestyle impacts significantly the purchase of organic food. However, the psychographic characteristics have not been sufficiently studied in the research conducted in Romania.

Pagalea and Uta (2012) found that work, hobbies, recreation, and entertainment are among their priorities, and community and shopping activities are considered relatively important. Therefore, the green consumer is a dynamic person, focusing on both career and personal life, trying to strike a balance between the two plans. The expressed opinions reveal that a consumer of organic products is a person who places a special emphasis on education and wants to know himself very well but also to understand the world in which he lives.

Roșca and Tănase (2017) have created a profile of people adopting a healthy lifestyle, based on data collected by BRAT. There are people who are future-oriented, work hard to gain a foothold in society, are always looking for new challenges and are optimistic about the future.

The car is part of their life, although it is considered an important source of pollution. These people are keeping up with the technological trends, buying the latest gadgets and any device that makes their life easier. They are informed consumers who do not consider the price an important criterion when choosing products, while the quality is an important feature.

Behavioral profile

Product usage. Most of the studies that investigated the characteristics of the behavior of the Romanian consumer of organic food products included among the variables investigated and the product usage (Pagalea and Uta, 2012; Draghici et al., 2016; Petrescu et al., 2017). Analyzing the mentioned studies, it is noteworthy that a small number of consumers buy with a very high frequency and high organic products, as a rule, most of them are occasional consumers of organic products, who buy products every 2-3 days. The causes of this phenomenon could be the high price and/or the reduced availability. However, it is obvious that these people would like to adopt an ecological lifestyle, but have not yet taken this step (Pagalea and Uta, 2012). In addition, Draghici et al. (2016) pointed out that occasional users seem to be the most receptive to the promotion of organic products at the point of sale, which may indicate that they buy organic products from the implosion.

Reasons to buy. The still small number of organic products' consumers from Romania determines a reduced diversity in terms of the purchase reasons that underlie this decision. Thus, consumers are motivated more by obtaining personal benefits, than by the concerns for the welfare of the society and the concern for the environment. In Table no. 2 are presented the reasons that were identified by researchers among Romanian consumers. As we can see, the main reason identified in most of the studies is related to health, which consumers believe they can maintain or regain by consuming organic products.

Table no. 2 Reasons to buy organic food

Reference	Year	Reasons to buy organic food*
Bozga	2015	1. health, 2. superior quality; better taste; 3. do not contain chemicals/hormones/antibiotics/GMO; 4. product safety; quality guarantee; 5. care for the environment;
Voicu and Iliescu	2015	1. tastier products; 2. healthier products; 3. are in trend; 4. protects the environment;
Roman et al.	2015	1. healthy products; 2. reduce long-term expenses; 3. positive impact on the environment; 4. fashion products;
Voinea et al.	2015	1.consumption safety; 2. quality/price ratio; 3. high nutritional value;
Vietoris et al.	2016	1.health care; 2. own health problems; 3.environmental concern; 4. vegetarian diet; 5.randomly;
Oroian et al.	2017	1. natural and sustainable consumption; 2. extrinsic attributes; 3. health; 4. sensory appeal; 5. weight concern; 6.social statute;

Note: *the reasons are placed in the order of the importance assigned by the respondents;

Source: Developed by the author

Benefits. In general, most research has shown that the benefits related to maintaining health and those related to environmental protection are most associated with organic products (Dumea, 2012; Pagalea and Uta, 2012; Draghici, et al., 2016; Oroian, et al., 2017). As a rule, the benefits of organic products are presented in comparison to conventional products. In this regard, some specialists (Petrescu and Petrescu-Mag, 2015) have identified that most consumers consider organic food to be healthier than conventional food (87%) and that they contribute more to environmental protection than conventional food (75%). Also, Voicu and Iliescu (2015) observed that 86% of the consumers in Bucharest, respectively 82.67%,

consider that organic food are "much better" and "the best" in terms of content and, respectively, in terms of taste, compared to conventional food.

Categories of organic food bought/consumed. Table no. 3 presents the main categories of organic food that Romanian consumers declare to buy and/or consume frequently. We note that the results are somehow similar to the analyzed, the main categories mentioned being vegetables and fruits, dairy products and cheeses, eggs, meat, cereals and seeds, but also bakery products. We can consider that due to the high prices specific to organic products, people concerned with the adoption of pro-ecological behavior are trying to purchase from ecological sources especially the basic food products.

Table no. 3 Main categories of organic food bought/consumed

Reference	Year	Categories of organic food*
Voinea et al.	2015	1. fresh fruit; 2. fresh vegetables and cheeses; 3. dairy acid products; 4. legumes and seeds; 5. breakfast cereals
Voicu and Iliescu	2015	1. fruits and/or vegetables; 2. bakery products; 3. milk and/or dairy products; 4. meat and/or meat products; 5. eggs;
Victoris et al.	2016	1. products made from cereals; 2. potatoes; 3. eggs; 4. fresh and processed vegetables; 5. legumes and meat and/or meat products;
Oroian et al.	2017	1. fruits and vegetables; 2. dairy products; 3. meat and meat products; 4. bakery products; 5. sweets;
Petrescu et al.	2017	1. fresh vegetables; 2. fresh fruit; 3. eggs; 4. meat and/or meat products; 5. milk, dairy;

Note: *the first five product categories mentioned in studies are presented;

Source: Developed by the author

Place of purchase. Petrescu et al. (2017) showed that the most common places of purchase for organic food are specialized stores and supermarkets. These results are due to the fact that the certified products are available to a greater extent and diversity in these sales spaces. The same results were obtained by Pagalea and Uta (2012), who mentioned that when they asked the respondents to mention other places, they noticed that consumers are experiencing a major confusion between the certified organic products and the products purchased from the food markets or from domestic producers. Also, Bozga (2015) obtained in his research that a very large percentage of buyers buy "organic" products from the markets, but he states that in the food markets in Romania the certified organic products are almost non-existent.

Conclusions

The organic food market in Romania is still considered a niche market, characterized by low consumption, but increasing from year to year. The identification of the consumer profile of organic food is an essential point in the development of this market. Research in this area can provide an important direction for decision-makers regarding marketing strategies that may prove useful for informing and educating the public, but also for several initiatives regarding product packaging, pricing, choice of methods suitable for distribution and others.

The research carried out on the Romanian market focused mainly on the definition of the consumer based on demographic, socio-economic and behavioral criteria, and less on the identification of specific psychographic characteristics. Most studies are quantitative research, having as a research method the survey.

The Romanian consumer is between 35-45 years old, but there is a high potential among younger consumers, especially those who already have a family and/or are concerned about the health. The green consumer is rather a woman, with above-average income and with higher education. This type of consumer is an active and dynamic person, trying to achieve a

balance between family and professional life. He is a person concerned with physical and mental development, who cares about his health and those close to him.

This study wants to affirm the need for further research to better understand the organic consumer in Romania. The reduced number of qualitative research carried out is also observed regarding the type of information available. Understanding the buying and consumption behavior, some attitudes, motivations and deep feelings of these consumers, are still topics that are not addressed by the specialists in the field. Also, establishing the importance for consumers regarding the various behavioral or psychological variables, such as consumers' opinions and beliefs, lifestyle, value, etc., may represent future research directions.

The lack of representative research carried out at the national level, leads to difficulties in shaping a representative profile for the consumer of organic products in Romania. Besides, the lack of investigation of all the mentioned criteria in large research leads to the same problem. These two reported research goals could also be exploited in future studies.

Finally, it is important to mention the limitations of this analysis. This secondary data research did not include all the studies carried out on the organic food market that address the topic of the organic consumer. The selection of the studies was made based on subjective criteria, but taking into account the relevance in relation to the studied subject. Also, not all the variables specific to the three categories of criteria mentioned in the literature review were analyzed.

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ANALYSIS OF THE FACTORS THAT INFLUENCE PATIENT SATISFACTION IN HEALTHCARE

Mihai Mehedințu¹, Roxana Voicu², Mihai Stoica³ and Alina Filip⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: mihai.mehedintu88@yahoo.com; E-mail: roxanna.voicu@yahoo.com;

E-mail: mihai.stoica.91@gmail.com; E-mail: filip.alina@gmail.com

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Abstract

The purpose of this study is to find out to what degree the hospitalized patients are satisfied with the physician-patient relationship and also with the quality of medical services offered by the medical unit. Also, another goal of the study is to increase awareness of the importance of satisfying patients' needs and expectations in the healthcare field. The perception of patient satisfaction was measured using the internal patient satisfaction questionnaires within the National Institute for Infectious Diseases "Prof. Dr. Matei Balș", from Bucharest, Romania. Analyzing patient experience with both the medical unit and the physician is a powerful tool that helps practitioners to properly incorporate patient perspectives in service delivery and also improve patient satisfaction. Findings indicate that if the patients are satisfied with the services offered by the medical unit, they will definitely recommend the hospital to their friends in case of medical needs. Moreover, when patients have a good perception of the quality of medical services provided by both the physician and the medical unit, this has a positive impact on their satisfaction and their trust. High patient satisfaction and positive feedback from the patients are very powerful indicators that show the involvement of doctors and the efforts of the medical unit in treating patients and the importance of keeping them satisfied.

Keywords

Patient satisfaction, quality in health care, health services, relationship marketing.

JEL Classification

I10, M10, M12.

Introduction

Increasing globalization, maturing markets, intensifying competition and changes in the consumer behavior are just a few factors that contributed to the significant development of the field of marketing in the recent decades. In the context where relationship marketing was

later defined as a key component of the holistic marketing, also known as modern marketing (Kotler, 2012), relationship marketing emphasizes the need to individualize the offer according to the specific needs of each client, through a continuous dialogue and different personalized forms of communication (Grönroos, 2004). Customer relationship marketing refers to attracting, maintaining and developing relationships with customers (Berry *et al.*, 1983). Good customer relationships can only be maintained if the customers are satisfied with the products or services received, customer satisfaction being vital for the success of a business. “Satisfaction is fundamental to the well being of individual consumers, to the profits of firms supported through purchasing and patronization, and to the stability of economic and political structures” (Oliver, 2015).

Patient satisfaction in healthcare

Like marketing, health services have undergone major changes in the last few decades. Nowadays, the patient is considered to be at the center of healthcare, but to put the patient in the first place requires a lot of discipline both from the doctors, assistants, and carers as well as from the institutions point of view. Healthcare is an increasingly competitive field, and studying patient experience with both the medical unit and the practitioner is a rather powerful tool that encourages physicians to better incorporate patient perspectives in service delivery and also improve patient satisfaction. Likewise, currently a much greater emphasis is placed on the quality of the medical services offered by the medical unit, as well as on the whole patient's experience, both in the relationship with the doctor and in the relationship with the medical unit. Patient satisfaction is "a health care recipient's reaction to salient aspects of the context, process, and result of their service experience" (Pascoe, 1983). It follows that determining the level of patient satisfaction is an important KPI that healthcare providers must take into account in order to obtain the patients' opinion on how they have been treated in the respective medical unit. “The key to patient satisfaction lies in: understanding the patient, understanding yourself and your hospital’s culture, and effectively utilizing your survey data” (Press, 1999). Also, the “overall cleanliness of the facilities, the availability of modern equipment, and a general feeling that the facilities are in good repair can enhance patient satisfaction” (Andaleeb, 1988), and these aspects also contribute significantly to patient retention and loyalty. In this context, quantitative research, using the questionnaire as a tool, is one of the most widely used and handy methods of researching patient satisfaction.

Also, in many hospitals, especially in the state field, collecting patient satisfaction data is mandatory, as it is part of the strategy for monitoring activities and improving services. Assessing the satisfaction of a service is harder than assessing the satisfaction of a product. Keeping patients satisfied is an important issue, as it contributes decisively to patient retention. In healthcare, “the patient defines the only criteria that count in evaluating service quality. Only patients can judge service quality; all other judgements are irrelevant” (Shelton, 2000). Keeping this in consideration, evaluating patient satisfaction is a strong outcome indicator of the quality of medical services provided by a healthcare unit. It has been found that the patient is more satisfied when the healthcare provider, meaning the healthcare unit or the physician, is willing to provide more information and to consider the participation of patients in making decisions concerning their treatment options (Joosten *et al.*, 2008).

Various methods have been addressed to study patient satisfaction concerning the quality of medical services, but satisfaction questionnaires have “undoubtedly the most commonly used method and must fulfill certain psychometric properties, especially if the aim is to generalize the information to the target population” (Gonzales *et al.*, 2005).

Research methodology

A quantitative research was performed using the survey method, using the questionnaire as a tool. The internal patient satisfaction questionnaires within the National Institute for

Infectious Diseases “Prof. Dr. Matei Balș”, from Bucharest, Romania, were analyzed in order to obtain data on patient satisfaction. The survey was conducted by the nurses, who administered the questionnaires in a face-to-face manner.

For this study, we selected the patient satisfaction questionnaires collected between January the 1st and December 31st, 2019. The study was conducted among hospitalized patients, both with acute and chronic diseases, and legal representatives of the patients. Data from a total number of 2348 questionnaires administered to patients and legal representatives of the patients, representing 49.37% of all hospitalizations in the analyzed month, was obtained by answering a total of 12 main subjects, containing 31 questions, to which are added the socio-demographic elements. The survey includes 20 closed questions relying on 5-point Likert scales to assess the main determinants of patients' satisfaction. The rest of the questions are divided as follows: eight dichotomous questions (that have only two possible answers), one question with multiple choices with 3 variants, and a single open question.

Socio-demographic data of the respondents

A total of 70% of the survey respondents are legal representatives of the patients, and the remaining 30% are patients who were hospitalized throughout the entire year of 2019. The survey respondents are divided into age groups as follows: 49% between 30-39 Y/O, 16% between 20-29 Y/O, 13% between 40-49 Y/O, 6% between 60-69 Y/O, 4% over 70 Y/O and 3% under 20 Y/O.

Regarding the gender of the respondents, 80% are women and 20% are men, while 75% of the respondents come from urban areas and 25% from rural areas. Regarding the level of education, 57.5% of the respondents graduated from high school, and 32% graduated from college, while 10.5% only graduated from primary or secondary school. Regarding the marital status, 80% of the respondents were married, 12% unmarried, 4% widowed, 3% divorced and 1% answered "other".

Analysis

The data was collected from the patient satisfaction questionnaires and compiled into a spreadsheet, then the data was compiled into raw totals and percentages, and then exported into graphics.

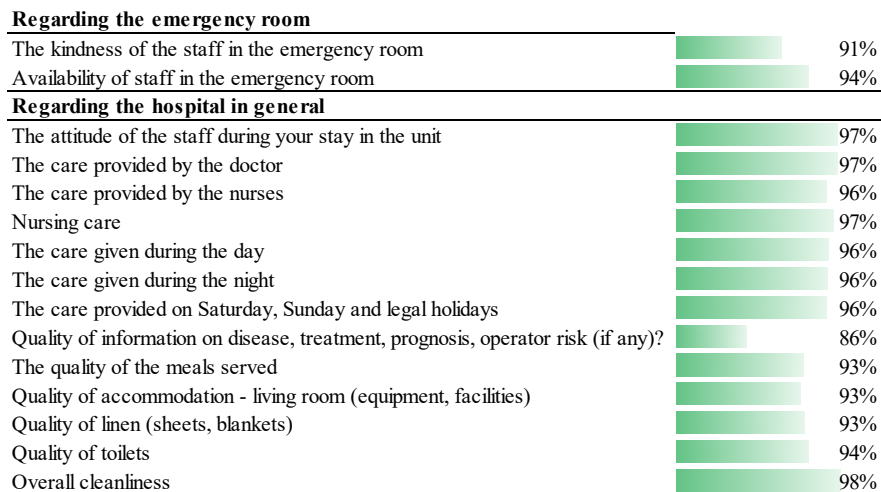


Fig. no. 1 How do you appreciate the quality of the services received by you, both at the emergency room, and in the hospital in general?

Source: authors, using raw data obtained with the approval of the National Institute for Infectious Diseases “Prof. Dr. Matei Balș”, Bucharest, Romania

Information analysis

The respondents' answers were scored according to the Likert scale, from 1 to 5, and then the results were analyzed by summing the total amount obtained and divided by the number of respondents.

Regarding how patients appreciate the quality of services received both at the emergency room, and in the hospital in general, an overwhelming majority had a very good or good experience, the only percentage lower, respectively 86%, being obtained by looking at the quality of meals served in the hospital. But the quality of the meals served does not depend entirely on the hospital's desire but also on the allocated budget, which is often not comprehensive.

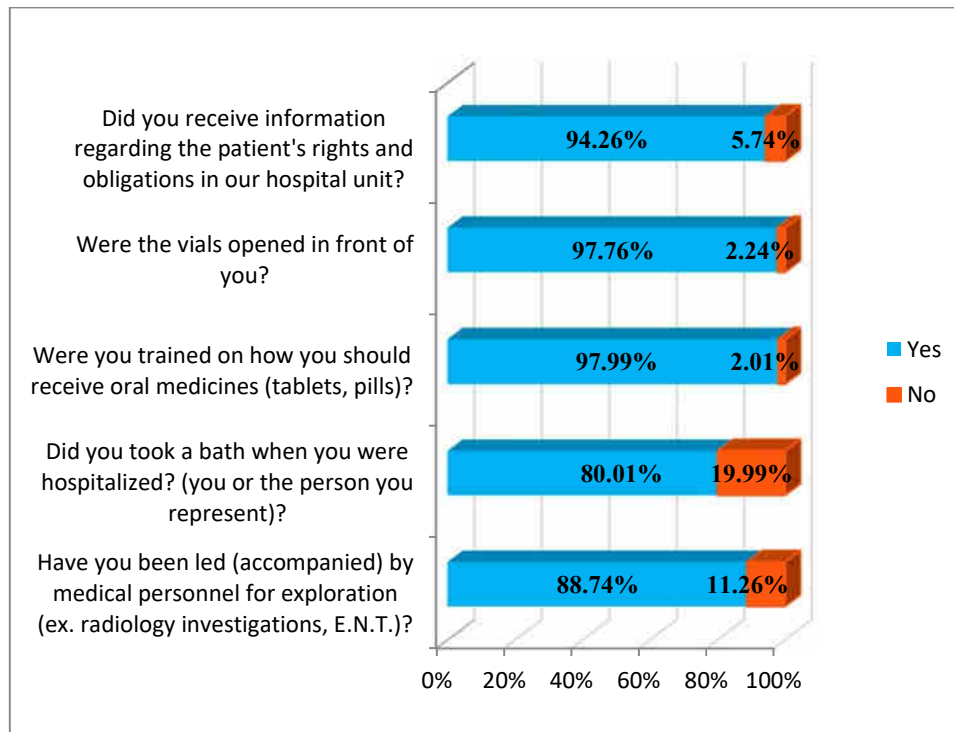


Fig. no. 2 In this hospital, you can say that:

Source: authors, using raw data obtained with the approval of the National Institute for Infectious Diseases "Prof. Dr. Matei Balș", Bucharest, Romania.

Information analysis

These percentages show the high level of the patients' or their legal representatives' satisfaction regarding the medical unit as a whole. A rather lower percentage, but still high, of 80.01% was obtained at the question related to the bath that the patients took when they were hospitalized. Taking a bath is part of the hospitalization procedure, but in case of emergencies or serious health issues, sometimes this step is skipped. Also, a lower percentage, compared to the other ones obtained in this survey, of 88.74% was obtained when asked if the patients or their legal representatives were accompanied by medical personnel for exploration or other medical investigations. Usually, this happens due to the fluctuations of personnel in the hospitals all over Romania, and if not treated properly, in the near future can become a serious factor affecting the quality of medical services and patients' satisfaction.

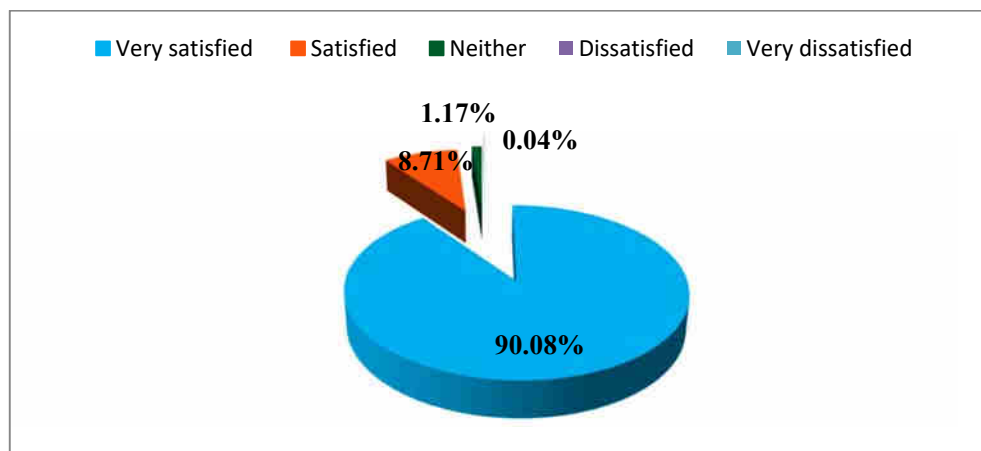


Fig. no. 3 How satisfied were you with the services offered by the hospital?

Source: authors, using raw data obtained with the approval of the National Institute for Infectious Diseases "Prof. Dr. Matei Balș", Bucharest, Romania.

Information analysis

According to this graphic, over 98% of the total respondents were very satisfied or satisfied with the general services offered by the hospital. A small part of 1.17% of the respondents were neither satisfied nor dissatisfied, only 0.4% were dissatisfied and 0% were very dissatisfied.

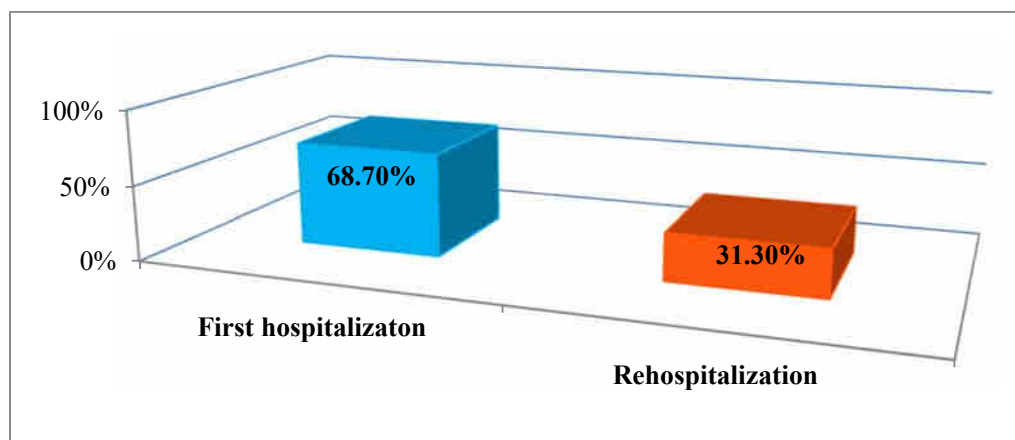


Fig. no. 4 If a close friend or someone you know is in need of a medical service that is available here, would you recommend this hospital?

Source: authors, using raw data obtained with the approval of the National Institute for Infectious Diseases "Prof. Dr. Matei Balș", Bucharest, Romania.

Information analysis

Being a tertiary care public hospital and offering a 24-hour open emergency room, it is normal for the majority of patients who are hospitalized at the National Institute for Infectious Diseases "Prof. Dr. Matei Balș" to be at their first hospitalization, but the percentage of persons which are rehospitalized is very high. This indicates that patients are satisfied with the medical services received from the physicians and the medical unit as a whole, and also shows the

high level of involvement provided by the medical unit and the efforts to keep patients satisfied.

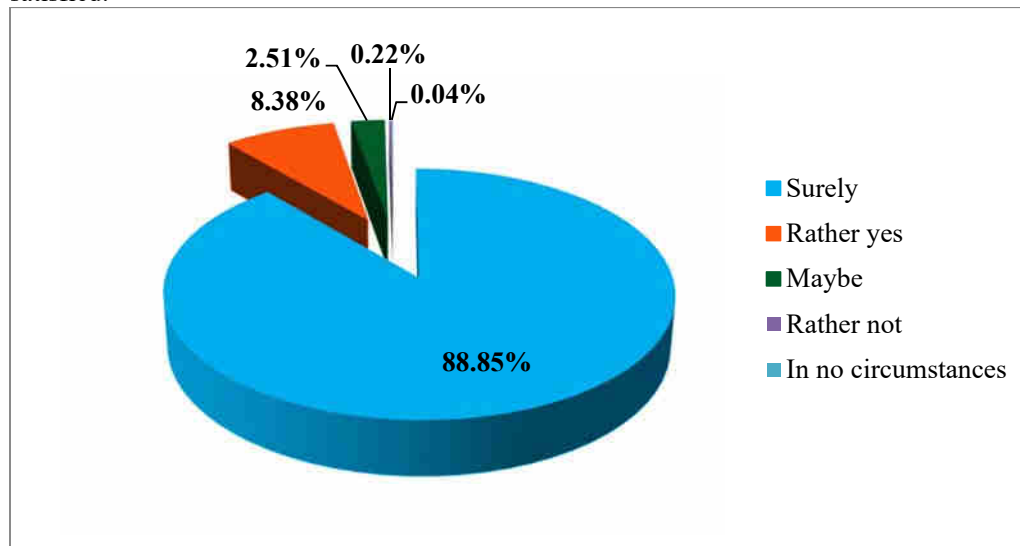


Fig. no. 5 If a close friend or someone you know is in need of a medical service that is available here, would you recommend this hospital?

Source: authors, using raw data obtained with the approval of the National Institute for Infectious Diseases "Prof. Dr. Matei Balș", Bucharest, Romania.

Information analysis

This chart shows that over 88% of the respondents would recommend this hospital to a close friend or someone they know. 8.38% may recommend the hospital, 2.51% may recommend it and only 0.26% will not recommend this hospital. Such a favorable percentage shows that patients and their legal representatives who completed the survey appreciate the quality of medical services provided by the doctors in this hospital, but also they are satisfied with the hospital in general.

Managerial implications

This study proved that conducting surveys using the questionnaire as a tool is an important asset that helps hospitals to identify the characteristics of the medical services that have the most impact on patient satisfaction. In this way, hospitals can improve and monitor over time the activities that have the most influence on improving patients' satisfaction and their perceptions over the medical services. In order to obtain higher scores and to improve the quality of medical services, it is necessary for the hospitals to be in a continuous activity of improving the patients' journey during the hospitalization and to keep the patients satisfied. The greater the emphasis on patient satisfaction, the more the hospital management proves to be more involved in the process of maintaining the patients' satisfaction at a high level. Activities such as the accommodation conditions, overall cleanliness, the quality of linen (sheets and blankets) and the friendliness of the staff have a great contribution to keeping the patients satisfied.

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CORRUPTION AND ITS IMPACT ON ENTREPRENEURSHIP

**Mihaela-Sorina Dumitrescu¹, Dorel Paraschiv², Maria Nițu³ and
Ioan-Radu Petrariu⁴**

^{1) 2) 3) 4)} The Bucharest University of Economic Studies, Romania

E-mail: sorina.dumitrescu16@yahoo.com; E-mail: dorel.paraschiv@ase.ro

E-mail: nitumaria2@gmail.com; E-mail: ioanradupetrariu@gmail.com

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Abstract

Corruption reduces competitiveness, private investments, limiting the success rate for an entrepreneur and creating an unhealthy ecosystem which does not allow the development of a prosper environment. Entrepreneurship creates prosperity, generates jobs and economic growth.

The objectives of the research paper are to present two relevant indexes - Corruption perception index and Global entrepreneurship index and to analyse the connection between corruption and entrepreneurship through comparing these important indexes.

Using statistic methods like graphic method and the regression method, it was demonstrated an intense and a direct connection between the two indexes. More accurate, the less corruption there is, the healthier will be the entrepreneurship ecosystem.

Entrepreneurs are searching for a healthy ecosystem which offers support and opportunities, not for a corrupt one because they have key skills like innovation, vision, feelings for market opportunities or opening for risk.

Keywords

corruption perception index, global entrepreneurship index, entrepreneurship

JEL Classification

D73, M21

Introduction

Corruption drags on the economic growth. The way of spending public funds is inefficient, missing productive outcomes.

According to European Commission, corruption creates losses of 120 billion euro per year, amount which is comparative to the annual budget of the EU. This is an estimated amount by specialized institutions, but the social cost does not involve just the public funds diverted or the bribes paid, but also the loss from distortion of incentives, misallocation of resources and other negative impacts of corruption. (European Commission, 2018)

Corruption makes the environment less attractive for business, reducing competitiveness, private investments and the potential of the economy.

Moreover, it decreases the trust in public institutions, reducing the quality of their services for the private sector. The more integrity and transparency exist in the public sector, the less corruption will be and the rule of law will be consolidated, allowing competitiveness, more efficient public spending and tax collection.

Entrepreneurship creates prosperity, generates jobs and economic growth. Innovation and entrepreneurship have contributed to economic development since the period of Schumpeter. (Harbi & Anderson, 2010).

An entrepreneur represents „a person with the vision to see an innovation and the ability to bring it to market. Entrepreneurs envision scalable, high-growth businesses”.

Entrepreneurial ecosystem is defined by The Global Entrepreneurship and Development Institute as “...dynamic institutionally embedded interaction between entrepreneurial attitudes, abilities and aspirations, by individuals, which drives the allocation of resources through the creation and operation of new ventures.” (The Global Entrepreneurship and Development Institute, 2018).

In the literature are debated both perspective for the relation between corruption and entrepreneurship. The most frequent opinion is that corruption has a “sand-the-wheel effect” on entrepreneurial ecosystem, but other studies identified a “grease-the-wheel effect” (Uribe-Toril et al., 2019). This effect is explained by the negative impact that corruption has on the competitiveness, like barriers to private system as excessively strict regulations, difficult conditions for obtaining a loan, favoring the establishment of new firms (Ceresia, 2018).

Also, using an econometric model, it was demonstrated that the rate of self-employment decreases at the same level with the increasing of corruption index. (Harbi & Anderson, 2010).

The aim of the research paper is to validate the hypothesis that corruption influence in a negative way the entrepreneurship, through comparing two important indexes - Corruption perception index and Global entrepreneurship index, using statistic methods.

Corruption Perception Index

Transparency International organization measures the level of public sector corruption around the world and how countries fight against corruption.

The Corruption Perception Index is considered a *de-facto* standard, based on data coming from international surveys of reputable institutions directly interested in fighting against corruption like World Bank, business people and experts. Scores are assigned according to parameters 0 - extremely corrupt and 100 - not corrupted.

According to Transparency International Organisation, the composite index comes from 13 surveys of institutions which are specialised in business climate analysis and governance, covering views of businesspeople and expert assessments.

Data shows that countries like Bulgaria and Greece do not make serious progress against corruption, compared to Sweden and Denmark which have the highest indexes - 85 and 88.

Global Entrepreneurship index

The Global Entrepreneurship Index is “a composite indicator for the health of the entrepreneurship ecosystem in a given country”. It shows the quality of the entrepreneurship and the support for the entrepreneurial ecosystem. It was identified three levels for a country’s score: “the overall GEI score, scores for Individuals and Institutions, and the pillar level” (Ács Z et al., 2018).

The Global Entrepreneurship and Development Institute identified 14 important pillars, which contributes to the health of entrepreneurial ecosystems (figure no. 1). Pillars are detailed in the annex no. 1.

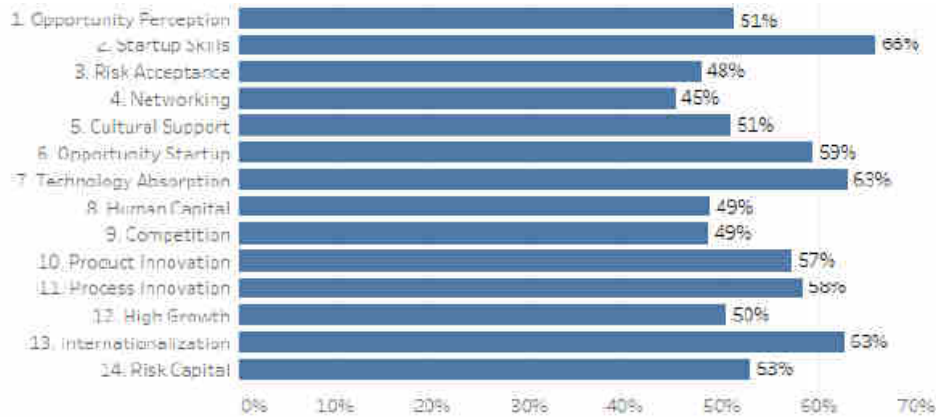


Fig. no. 1 Europe component average in 2018

Source: The Global Entrepreneurship and Development Institute, Global Entrepreneurship index, 2018 <https://thegedi.org/2018-global-entrepreneurship-index/>

According to the report of Global Entrepreneurship and Development Institute, Europe has high scores for the pillars Internationalization and Technology Absorption.

Also, the score for the pillar Startup Skills has recently growth. Switzerland leads with 80%. European countries scored high on Startup Skills, due to the access to education which allows the development of the skills which are necessary for starting a business.

The weakness of the region is the Networking pillar, but overall we can observe that for all the components of GEI, the scores seems to be relatively balanced, showing that a mix of policy could have a larger impact for the overall performance, than focusing on one policy area.

On the top we find the Northern European and at the bottom Eastern European nations. For example, Bulgaria, The United Kingdom, Italy, Ireland and Poland improved their GEI scores by minimum 3.5 points comparing to their 2017 scores. (Ács Z et al., 2018).

The connection between CPI and GEI

Considering the variable “Corruption perception index” and “Global entrepreneurship index” for the EU countries (table no. 1), it was analysed the connection between corruption and entrepreneurship using elementary methods of analysis like the graphic method and the regression method.

Table no. 1 Corruption perception index & Global Entrepreneurship index

Country	CPI 2018	GEI 2018 (%)
Austria	76	66
Belgium	75	64
Bulgaria	42	28
Czech Republic	59	43
Cyprus	59	48
Croatia	48	34

Denmark	88	74
Estonia	73	55
Finland	85	68
France	72	69
Germany	80	66
Greece	45	37
Ireland	73	74
Italy	52	41
Latvia	58	40
Lithuania	59	51
Luxembourg	81	58
United Kingdom	80	78
Netherlands	82	68
Poland	60	50
Portugal	64	49
Romania	47	38
Slovenia	60	54
Slovakia	50	45
Spain	58	45
Sweden	85	73
Hungary	46	36

Source: Eurostat, 2018. Corruption Perceptions Index (source: Transparency International
https://ec.europa.eu/eurostat/web/products-datasets/-/sdg_16_50

The Global Entrepreneurship and Development Institute, Global Entrepreneurship index, 2018
<https://thegedi.org/2018-global-entrepreneurship-index/>

Using the graphic method for identifying the type of the connection between the two indexes presented above, it can be observed, considering the layout of the points to the first bisecting, a strong connection in a first phase, which weakens slightly in the other part of the correlogram (figure no. 2).

We can deduct a direct and an intense connection between the indexes of corruption and entrepreneurship.

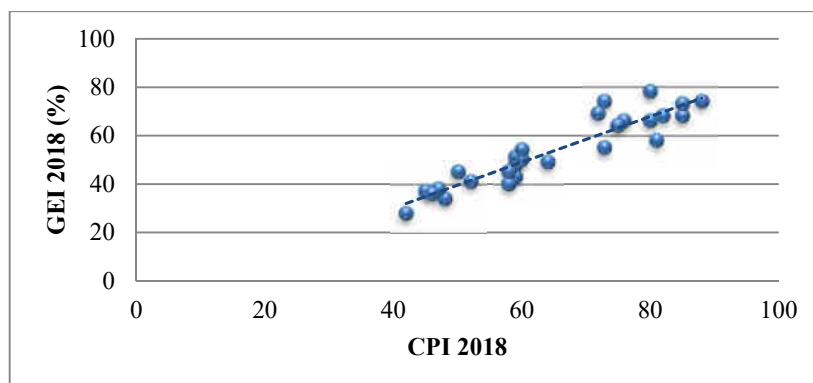


Fig. no. 2 Correlogram

Source: own interpretation after the statistics

Pearson correlation coefficient (fig. no 3) is used for the analysis of the statistical connection between CPI and GEI (%) and shows a strong and a direct correlation, the coefficient being statistically significant for a level of significance of 5%.

	CPI 2018	GEI 2018 (%)
CPI 2018	1	
GEI 2018 (%)	0,9309	1

Fig. no. 3 Correlation Matrix

Source: own interpretation after the statistics

For highlighting the dependence between *Global Entrepreneurship Index (GEI)* and *Corruption Perceptions Index (CPI)*, it was realized a regression analysis based on the following model:

$$GEI(\%) = \beta_0 + \beta_1 \cdot CPI + \varepsilon \quad (1)$$

The econometric model estimated, based on the values of the two variables (fig. no. 4) is:

$$\text{Predicted GEI} = -7,714 + 0,945 \cdot CPI \quad (2)$$

The model is valid for a level of significance of 5% (*Significance F* = 0.0000), the variation of CPI explaining 86.6% from the variation of GEI (fig.no 4).

The coefficient of the variable CPI is statistically significant for a level of significance of 5% (*P-value*=0.0000) and shows that the increasing of CPI with one unit will cause a growth of 0.95% for GEI.

SUMMARY OUTPUT						
Regression Statistics						
Multiple R	0,9309					
R Square	0,8665					
Adjusted R Square	0,8612					
Standard Error	5,3876					
Observations	27					
ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	4711,02	4711,02	162,30	0,00000	
Residual	25	725,64	29,03			
Total	26	5436,67				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	-7,714	4,937	-1,563	0,131	-17,882	2,453
CPI 2018	0,945	0,074	12,740	0,000	0,792	1,098

Fig. no. 4 Regression analysis

Source: own interpretation after the statistics

Abbreviations and acronyms

CPI – Corruption perception index

GEI – Global entrepreneurship index

Conclusions

Corruption will always be harmful to the society and will not allow the evolution of its economy. From an entrepreneur point of view, corruption is more harmful because it limits the success rate and do not promote the innovation and the entrepreneurial skills, but an unhealthy ecosystem which does not allow the development of a prosper environment.

The only chance to succeed in a corrupted society is to become corrupt, fact which is opposite to the entrepreneurship. When you want to become an entrepreneur, you have key skills like innovation, vision, feelings for market opportunities, opening for risk and you are searching for a healthy ecosystem which offers support and opportunities, not for a corrupt one.

Corruption and entrepreneurship represent two opposite dimensions. Less corruption exists, more opportunities for entrepreneurship will exist.

The article validates this hypothesis and shows through statistic methods a direct and an intense connection between two global representative indexes, which apparently are independent - Corruption perception index and Global entrepreneurship index, also being explained the methodology of its calculating.

One possible extensions of the research could be the analysis of the factors which contributed to the growth of these two indexes and how they could be extended to the others European countries.

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Appendix

Annex no. 1 Components of the entrepreneurship system

Pillar	Question
Opportunity Perception	Can the population identify opportunities to start a business and does the institutional environment make it possible to act on those opportunities?
Startup Skills	Does the population have the skills necessary to start a business based on their own perceptions and the availability of tertiary education?
Risk Acceptance	Are individuals willing to take the risk of starting a business? Is the environment relatively low risk or do unstable institutions add additional risk to starting a business?
Networking	Do entrepreneurs know each other and how geographically concentrated are their networks?
Cultural Support	How does the country view entrepreneurship? Is it easy to choose entrepreneurship or does corruption make entrepreneurship difficult relative to other career paths?
Opportunity Perception	Are entrepreneurs motivated by opportunity rather than necessity and does governance make the choice to be an entrepreneur easy?
Technology Absorption	Is the technology sector large and can businesses rapidly absorb new technology?
Human Capital	Are entrepreneurs highly educated, well trained in business and able to move freely in the labor market?
Competition	Are entrepreneurs creating unique products and services and able to enter the market with them?
Product Innovation	Is the country able to develop new products and integrate new technology?
Process Innovation	Do businesses use new technology and are they able access high quality human capital in STEM fields?
High Growth	Do businesses intend to grow and have the strategic capacity to achieve this growth?
Internationalization	Do entrepreneurs want to enter global markets and is the economy complex enough to produce ideas that are valuable globally?
Risk Capital	Is capital available from both individual and institutional investors?

Source: The Global Entrepreneurship and Development Institute, Global Entrepreneurship index, 2018. <https://thegei.org/2018-global-entrepreneurship-index/>

CORPORATE GOVERNANCE OF THE LARGEST EUROPEAN BANKS

Oana Marina Bătae¹, Liliana Feleagă² and Bogdan-Ștefan Ionescu³

^{1) 2) 3)} *The Bucharest University of Economic Studies, Bucharest, Romania*

E-mail: oana.marinabatae@gmail.com; E-mail: liliana.feleaga@cig.ase.ro

E-mail: bogdan.ionescu@cig.ase.ro

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Abstract

The objective of this paper is to analyze the current governance structure and its characteristics (composition and diversity of the boards in terms of type of committees, gender or nationality, independence, tenure and age of board members) on eleven largest European banks based on information which is available on the latest corporate governance or annual reports. Content analysis and comparative analysis were used as research methods, with a qualitative approach applied through manual coding of input data collected from public reports or official websites. Our results show how some of the largest European banks respond to the higher corporate governance requirements and expectations.

Keywords

Corporate governance, European banks, Board structure, independence, Board committees, stock market listing, gender diversity.

JEL Classification

G21, G34, L22, O16

Introduction

Over the time, banks are growing in complexity and keep on learning how to deal with it, meaning that increases in board size add value to credit institutions and this may be explained by the situation in which boards are relatively large because they include directors who fulfill specific functions in dealing with organizational complexity. However, larger boards do not necessarily increase value through dealing with complexity, but they may increase value when they include a larger number of directors who also sit on subsidiary boards and that is because they facilitate cooperation and also communication among the various banks within the holding. (Adams and Mehran, 2012).

Due to more government regulations, boards have become more independent and diligent, hence more willing to monitor. This supervision raises the likelihood of CEO dismissal and indirectly raises it if it leads companies to hire CEOs about whom not many things are known. Since these work harder, they might demand an increase in compensations as a consequence

of more independent boards (Adams et al., 2010). A research performed on 21 banks for the period from 2009 to 2017 revealed that gender diversity can promote bank efficiency up to a maximum of two female directors on a board of directors composed by nine members (Adeabah, et al., 2018). Moreover, firms which have more diversity on their boards perform better from the financial point of view (Horak and Cui, 2017). Since the banks have a greater complexity in their operations and internal controls and are also highly regulated, having a greater need for advisory services, large boards are considered beneficial to banks (Coles et al., 2008).

Earlier studies show that board independence enhances its monitoring role and also adds value to the organizations in their fiduciary responsibilities (Jensen and Meckling, 1976) and greater independence on the board leads to a high performing credit institution (Nyamongo and Temesgen, 2013). However, not all results are convergent. For example, Tanna et al. (2011) found that there is no value relevance assigned to the board independence that can influence the bank's efficiency.

The objective of this paper is to analyze the main aspects related to the boards structure and related committees, together with characteristics of board members such as nationality, independence, age and gender, in order to assess the convergence of the governance practices adopted within the largest European banks from different countries to which different cultures are assigned. We focused on a relatively small number of credit institutions over the most recent period of time to ensure that the analyzed information is up to date, in line with current developments.

The results highlight the differences between the largest banks in Europe, including differences in the way they disclose information even if they are from the same geographic region. As such, this study may serve as a baseline against which any new proposed governance change can be made or any additional information may be added to the public reports or any change in the manner of disclosing can also be done in the near future by the credit institutions.

Study on the structure, composition and diversity of the board of directors of the largest European banks

1. Research methodology

Our research aims at identifying the structure, composition and diversity of the board of directors, including independence and tenure of its members, as of now, all of these being a result of stricter oversight practices imposed by regulators. We focus on comparing how some of the largest banks from Europe respond to the higher corporate governance requirements and expectations, taking into account also the geographical region of each credit institution.

First, we selected 44 credit institutions that are components of Stoxx Europe 600 Banks ESG-X Index, including also specific information, such as country of domicile or sector from Thomson Reuters Eikon. *Secondly*, we determined a weight of the assets of each credit institution in total assets, selecting the first 11 European banks as of December 2018, because they represent 63% of the total number in terms of assets and they also cover 7 countries out of 14, considering them representative for our study. In terms of the number, the largest 11 European banks represent 25%. *Finally*, our selection comprises the following banks, in order of the size of total assets (EUR 14,940 billion as of December 2018): HSBC Holdings PLC, BNP Paribas SA, Credit Agricole SA, Banco Santander SA, Deutsche Bank AG, Societe Generale SA, Barclays PLC, Lloyds Banking Group PLC, ING Group NV, UBS Group, UniCredit SpA. Out of these, three banks are from United Kingdom and another three from France, the others being located in Spain, Italy, Switzerland, Germany and Netherlands.

In regards to the research methodology, we used content analysis and comparative analysis as methods, with a qualitative approach through a coding process applied manually to the sources. Our analysis is based on data collected from public disclosures, including corporate

governance reports and registration documents or annual reports either at 31 December 2018 or 31 December 2019, depending on the availability of information and publication date for each bank, us being focused on collecting the most up to date data. If no sufficient information was disclosed in the reports, additional details were looked for on the banks' official website, these being the most updated ones, even as of February 2020.

2. Results and discussion

2.1. Board size

Based on our analysis, if we eliminate the outliers meaning the banks with the highest number of Board of Directors ("BoD") members, Credit Agricole SA, respectively the lowest number of BoD members, ING, the average board size based on the most updated data available as of February 2020, is 14.3 members. The board size for each analyzed bank can be observed in (Fig. no.1). In France not all banks follow the same approach, meaning that out of three banks selected, board size for two of them is near to the average, BNP Paribas SA and Societe Generale SA, while one includes the highest number of BoD members. Our analysis shows that, in average, the board size is able to encourage an active dialogue among the members.

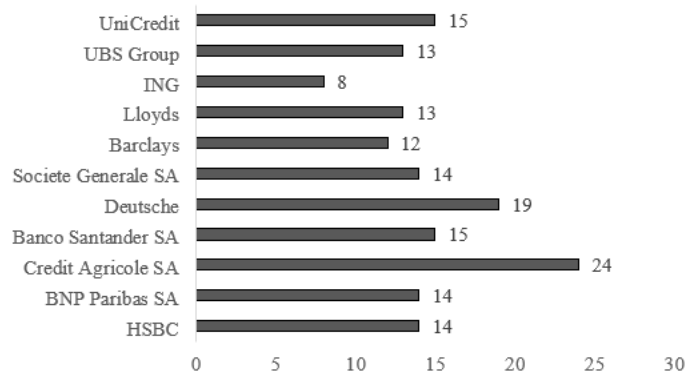


Fig. no. 1 Board size

Source: authors analysis

2.2. Board and chairman tenures and their disclosure

Based on the data available, we have split the board tenure in three intervals, as observed on (Fig.no.2) and that is because for some banks information was disclosed in different manner, meaning that for a few BoD members the date of first appointment or the expiry date for the mandates was not disclosed at all in any public report. However, different intervals were presented in the reports, but not at individual level. Therefore, we combined the data and then split it in three significant intervals by taking into account the board size.

In cases in which the board tenure was not directly presented, we have computed it as the difference between expiry date and first appointment date. Where the expiry date was not disclosed at all, we have considered it as being 2019 and then computed the board tenure.

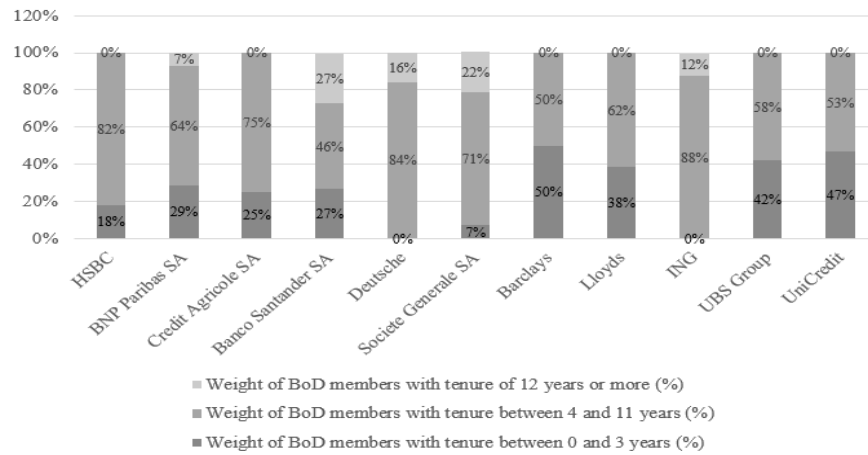


Fig. no. 2 Split of BoD tenure on 3 intervals

Source: authors analysis

The results presented in (Fig. no.3) show a maximum of BoD tenure of 32 years, the highest, in case of Banco Santander SA, this being comparable with the chairman tenure which is 31 years, the longest one. The minimum BoD tenure is met in case of UniCredit, of only 0.8 years with an average of 3.3 years, while the chairman's tenure is 3 years.

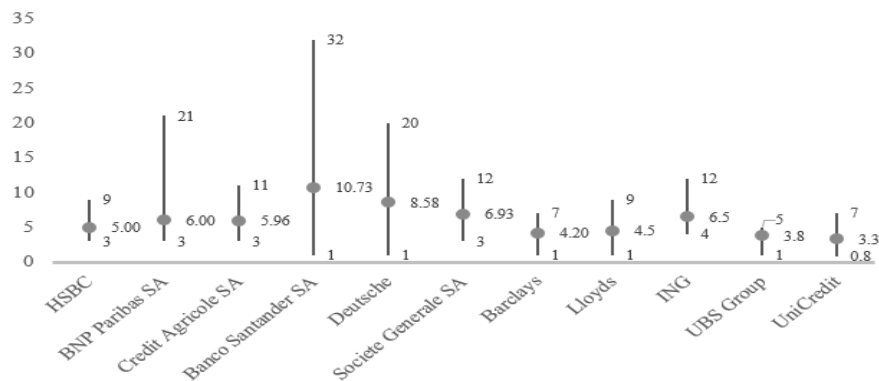


Fig. no. 3 Minimum, maximum and average Board tenure

Source: authors analysis

2.3. The effect of the Group's location on the nationality of the board members

HSBC and Barclays, located in United Kingdom, were not included in our analysis because no information in regards to nationality of BoD members was disclosed. From United Kingdom, in our sample, we also analysed Lloyds and observed that 76% of the total BoD members are British. In regards to France which represents the Group's location for BNP Paribas SA, Credit Agricole SA and Societe Generale SA, we have observed that a significant percentage, over 50% of the total BoD members, is represented by French, more exactly 64%, 96% and respectively 58%. For the remaining five banks, our analysis shows the following: Spanish BoD members represent 67% in total members in Banco Santander SA whose Group is located in Spain; German members represent 57% in case of Deutsche located in Germany; Dutch members represent 48% in case of ING located in Netherlands, Swiss members represent 30% in total BoD members in case of UBS Group and Italians represent 65% in

case of UniCredit located in Italy. In case of UBS Group, we have observed the lowest percentage for the local nationality, only 30%, still representative within the Board size but also supporting this credit institution as being the one with eight different nationalities within the Board, this being the highest number compared to all the other credit institutions.

2.4. Level of independence within the board

In terms of independence, we observed the Banks included different classification of the BoD members, not all of them following the same split between independent and non-independent directors. In case of significant number of banks, the weight of independent directors in total BoD members is representative for most of them, meaning is more than 50%, for UBS Group reaching a 100% percentage, followed by UniCredit, ING, Barclays with percentages of 93%, 88%, respectively 83%. Opposite to this, in case of Credit Agricole SA, independent directors represent only 25% in total BoD size, but this is in line with the local policies applied as mentioned in the annual report, if the two directors elected by employees are excluded. Also, in Deutsche, the weight of independent directors is 37%, while the most significant part is the one represented by directors elected by employees, this class being 53% in total. Detailed results are shown in (Fig. no. 4).

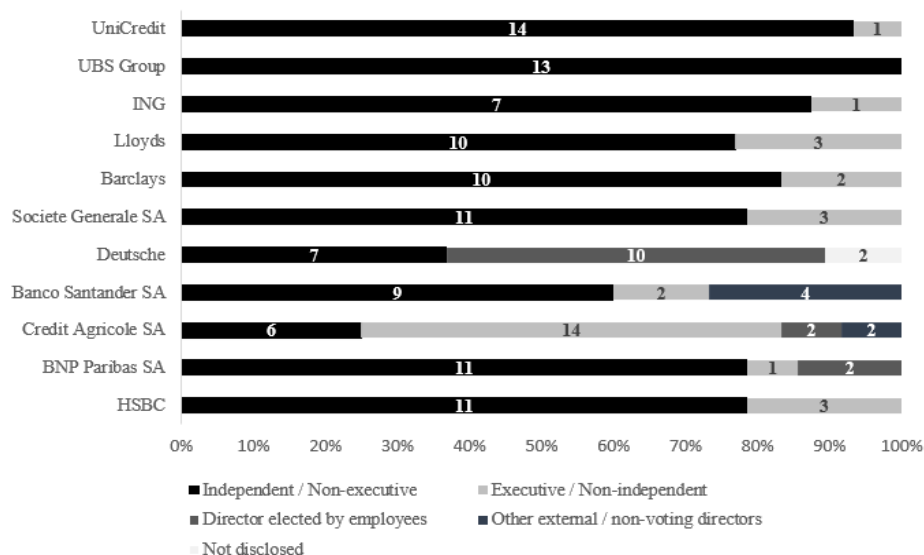


Fig. no. 4 Independence of the BoD

Source: authors analysis

2.5. Balanced board by age

We have analyzed the minimum, maximum and also average age of BoD members, as at 31 December 2019, computing it in cases where the information was collected from 2018 reports. In cases where the age or date of birth was not disclosed in the reports published by the banks, we have searched the information on public CVs available on the internet. We have considered average age as being the computed weighted average age taking into account also the board size. In case of UBS Group, the information in regard to the age was disclosed in a percentage of 92%, while for the remaining one member, the information could not be found. In case of UniCredit, the chairman of BoD died during 2019. The results presented in (Fig.no. 5) highlight the fact that in Spain and Italy, the BoD members reach the maximum age, while in Germany, the minimum age is 35 years.

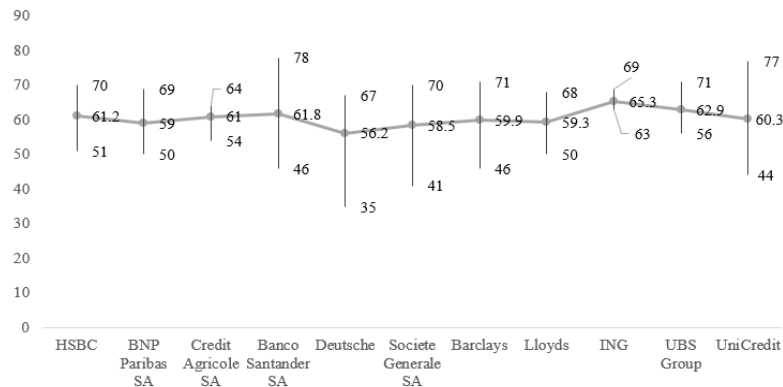


Fig. no. 5 Age analysis of BoD members in 2019

Source: authors analysis

2.6. Gender diversity of the board

In terms of gender distribution within BoD members, we observed that in French banks women represent more than 40%, followed by Spain and Italy with 40%, as it can be observed in (Fig.no.6). At the opposite pole, the lowest percentage represented by women is in UK and Netherlands with 25%. The Spanish credit institution, Banco Santander SA, is the only bank with a BoD chaired by a woman.

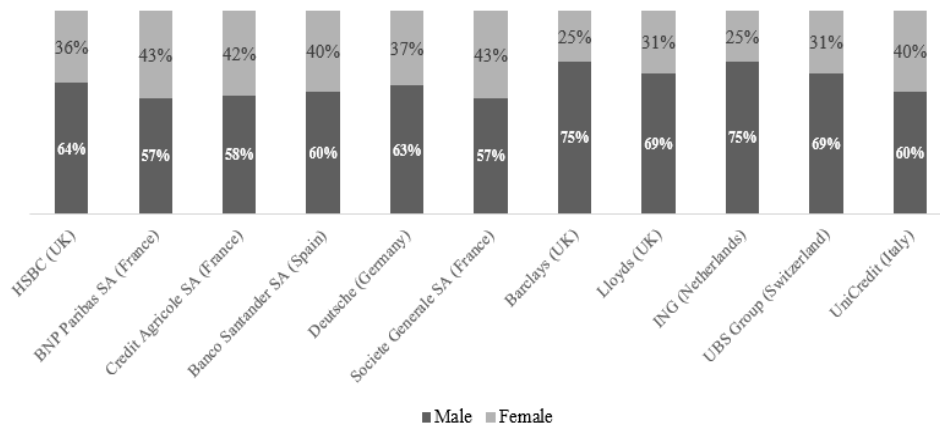


Fig. no. 6 Gender diversity within BoD

Source: authors analysis

2.7. Board committees and their membership overlap

The highest number of committees is in case of Deutsche Bank, this being correlated with the total board size of 19 members. Germany is followed by Spain with seven committees, while Credit Agricole SA has a number of six committees which is seen by us as being low if we compare with the total board size of 24 members, but is the only bank with all board committees chaired by women. Results show homogeneity for remaining credit institutions, these having either four or five committees. Simultaneous, in case of seven banks, the chairman is not only part of BoD, but also member of one to four Committees. An analysis of the simultaneous membership of the BoD members, excluding the chairman, of all Board committees was performed and the results are shown in (Table no. 1).

Table no. 1 BoD members allocation in other committees

Bank	Country of domicile	Weight of BoD members who simultaneous occupy more than one position in any of the Board committees (%)	Weight of BoD members who do not occupy any position in any of the Board committees (%)	Weight of Committees chaired by women in total Board committees (%)
HSBC	UK	71%	21%	20%
BNP Paribas SA	France	36%	7%	25%
Credit Agricole SA	France	42%	29%	100%
Banco Santander SA	Spain	73%	7%	43%
Deutsche	Germany	68%	0%	33%
Societe Generale SA	France	50%	21%	50%
Barclays	UK	42%	17%	0%
Lloyds	UK	69%	23%	20%
ING	Netherlands	63%	0%	0%
UBS Group	Switzerland	77%	8%	20%
UniCredit	Italy	33%	20%	0%

Source: authors analysis

The structure of each BoD is analysed by taking into account what committees compose it, so we considered classifying all committees with the same responsibility into one sole category. The difference is in case of “Other Committee”, where the committees do not have the same roles and accountabilities and they are not recurrent. The results are shown in (Fig.no. 7).

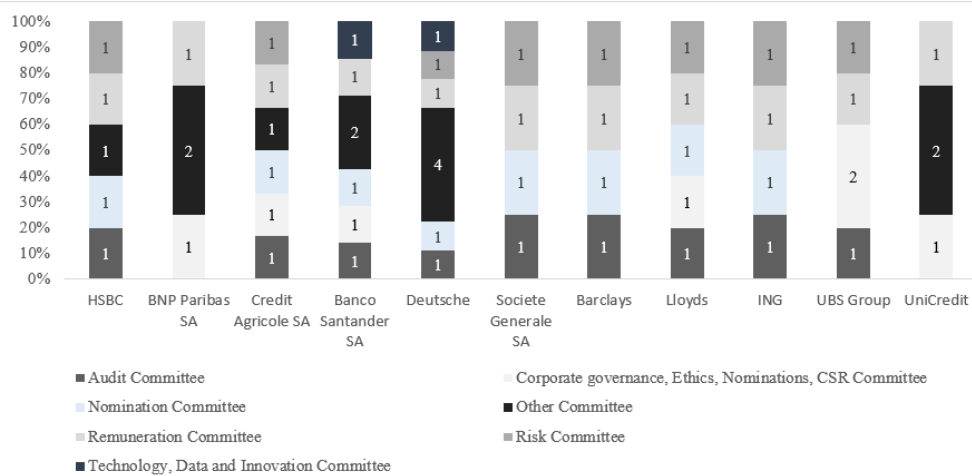


Fig. no. 7 Recurrent committees within the Board

Source: authors analysis

Conclusions

The objective of this paper was to analyze the governance structure and its characteristics on European banks based on information which is available on the latest corporate governance or annual reports.

Our results show a convergence trend in terms of board size and board tenure across Europe, the average size being 14.3 members and the most common interval representing the board

tenure being the one between 4 and 11 years. Also, we found that the Group's location directly impacts the most representative nationality within the Board, these two being congruent. Independent members are, in most of the cases, representative for BoD, except for banks in which is explicitly mentioned that even if there is a low number of independent directors, local requirements are still met or banks in which the corporate governance model include directors elected by employees. Average age is different from a bank to another, the minimum level being reached by Germany, while for banks from Spain and Italy maximum ages are reached, as expected.

Additionally, by computing the correlation coefficient between the board size and the weight of BoD members who simultaneous occupy more than one position in any of the Board committees, we obtained a value of 0.48, explaining a direct strong relationship between these. Nowadays, a lot of attention is assigned to everything that is related to digitalization and innovation, globally. This happens also in case of credit institutions, as our results show that special technology, data and innovation committees in charge with digitalization were established. Also, innovation is linked to entrepreneurial attitude, the last one being highlighted also by the presence of entrepreneurs within BoD members and their professional skills. There is much scope for further research in this area. Thus, the current study could be extended by resorting to a larger sample and by conducting a multiple financial exercise analysis. The effect of COVID-19 over the performance and governance of credit institutions could be assessed.

Acknowledgement

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ROMANIA: TWO DISTINCT FINANCIAL PERIODS AND THE SAME MANAGEMENT ERRORS

Adriana Grigorescu¹ and Denisa-Atena Costovici (Mema)²

¹⁾ National University of Political Studies and Public Administration, Romania

²⁾ "Valahia" University of Targoviste, Romania

E-mail: adriana.grigorescu@snsa.ro; E-mail: denisa21co@gmail.com

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Abstract

The management of European Funds absorption can be characterised by its most efficient indicator: the absorption rate. The 2007 – 2013 and the 2014 -2020 financial periods revealed various deficiencies in the way the Romanians State had handled certain aspects. This scientific research aims to analyse the management of European Funds in Romania, at macro-economic level - a topic of great interest these days. Our basic hypothesis revealed such funds' sustainability in our regional economic development. The inter-dependent variables of this research are the flawed management and the low absorption rate of European Funds. From a methodology viewpoint, we made a comparative analysis of the access, use and actual absorption rate of community funds, between the two financial period experienced by Romania, underlining the dysfunctions that prevented the absorption rate from growing, in each financial cycle. The purpose of this research is to identify a series common errors made during both analysed periods as well as the elements hindering the optimisation of this process. This research could be used as basis to reform the process of absorbing European Funds at national level, which could have a positive impact on improving the country's social infrastructure, speeding up its development and reducing its disparities.

Keywords

Dysfunctions management, EU funds, absorption rate, development, programming

JEL Classification

G23, G28, R58.

Introduction

The enlargement of the European Union, (EU) between 2004 and 2007, led to a change in perspective over the common EU budget. The 21st century paradigm came with rapid, deep and permanent changes triggered by certain new phenomena, such as mass migration,

climate changes, the need to reinforce the external EU borders and to consolidated collective security.

The main method taken into account for the consolidation of the EU, was to fill in the economic and competitiveness gap, between the various Member States. The key to understanding the true importance of a country's economic activity was that country's increasing orientation outwards, as the financial collapse of a state can reverberate in the entire community. The economic dysfunctions of a country have an impact on the other European contributors; thus, a national economic problem turns into a EU problem. Here, we can use as example, the financial crisis in Greece, which started in 2009, reached its peak in 2015, and only started to show slight signs of improvement in mid 2017, after a qualified intervention from the European Commission (EC). In order to survive the crisis, Greece benefitted from three bailout programmes: the first programme (implemented via the Greek Loan Facility, in 2010) comprised 110 billion euro; the second programme (implemented via the EFSF, in 2012) offered a bailout package of 172.6 billion euro while the third programme (implemented via the ESM, in 2015) came with 86 billion euro (European Court of Auditors, 2017). Following these joint efforts, Greece managed to leave the economic crisis behind it, the 20th of August, 2018 (Council on Foreign Relation, 2018). When it joined the EU, Romania too gained access to a set of economic opportunities meant to have a positive influence on its system development, for the purpose of helping this system reach the common EU standards. If the first financial period (2007-2013) took the Romanian authorities by surprise, thus being marked by major time gaps between the written proposals and the actual absorption rate, the second budget allocation period (2014-2020) seemed to benefit from a better process organisation, after a slow start.

From Romania's perspective, structural funds represent a central pillar in the country's efforts to acquire economic development, as they support social change and they can speed up the reform process, thus contributing to the country's pre-defined goal of aligning with the other European economies.

Romania understood the importance of creating an irreversible connection with the EU and thus, THE NATIONAL DEFENCE STRATEGY FOR 2015-2019 (Romania Presidential Administration, 2015) – which is still valid, until a new one is drawn up and adopted, has the following motto: *“A powerful Romania in Europe and in the world”*.

Article 20 of this strategy categorises the following matters as “national security interests”:

- reducing the development gaps and rebuilding large public systems and
- consolidating the European Union and actively participating in its integration processes from within.

Besides, article 65 of the same document also mentions the reception of EU money. The absorption of European Funds has been categorised as a persistent vulnerability that hinders the state institutions' capacity to assess and mitigate the impact of risks and threats. Articles 66-69 also reveal other vulnerabilities of the Romanian state, that prevent the country from reaching a high absorption rate of the funds provided by the EU: “The central and local administration's capacity to implement national and European public policies, corruption, the scarce resources and the incoherent way of managing them”.

Theoretical framework

The European Union invests in its less developed member states in view of reinforcing financial, social and territorial cohesion for the purpose of aligning the economies of all of its countries, in a harmonious future. The main aim of this operation is to reduce the imbalances existing between Western Europe and the less developed member states (Kolodziejewski, 2020). According to the specialized literature (Mikko, 2006), the way in which the common funds are allotted tends to favour smaller member states, which have a higher representation in the EU's decisional bodies.

Cohesion – with its three layers (economic, social and territorial) is regulated in the EU Treaty in articles 174-178, and it aims to “promote a harmonious development of the entire Union”.

Cohesion Policy or Regional Policy is the expression used inside the European Union to describe the bulk of all actions and measures taken by the EU institutions to reduce the development disparities existing between the Member States – which are integral part of the European Community. This can be understood as a macro-financial mechanism used to implement the investment strategy employed to achieve the desired items for the EU's unitary progress. This policy is mainly implemented through the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund (CF). These 3 types of funds, together with the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF) make up the European Structural and Investment Funds (ESIF) which are entirely designed to support the economic development of the EU member states.

In order to facilitate the use of the above mentioned funds, the EU has created and made available, for Romania, a set of instruments named Operational Programmes, aimed at reducing the discrepancies existing between the country's regions and consolidating cross-border, trans-national and inter-region cooperation within the EU space.

Research methods

This is an empiric research, based on directly observing the reality of the two financial periods mentioned above, i.e.: 2007-2013 and 2014-2020. We chose quantitative research to comprehend the phenomenon of European Funds absorption, underlining the features that we considered to be defining for this process, after analysing the absorption rates throughout the 13 calendar years of the financial periods. This phenomenon can have a direct impact on the improvement of the social infrastructure and it can reduce inter-regional disparities by supporting the state's harmonisation and integration in the European Community.

Our thematic analysis will focus the absorption rate of European Funds, which was branded as a national interest objective in the 2015-2019 National Defence Strategy. We will use comparative analysis of study the levels of access to, use of and effective absorption of European Funds, identifying the elements that hinder the optimisation of this process.

The data has been collected from the reports published by the European Commission and the Ministry of European Funds (MEF) and it refers the existing regulation in this domain, which have been transposed by the Romanian Government from the UE directives.

There are many ways in which this scientific research can be used in practice, as it centralises the dysfunctional elements identified during the previous and the current financial periods, in view of making the accession and absorption process more efficient; thus, it could prove to be very useful for the next financial period set to start in 2021.

Analysis of the European Funds absorption rate during the first financial period - 2007-2013

The structural and cohesion funds allotted by the EU to Romania, during the 2007-2013 financial period amounted to 19.7 (Ministry of European Funds, 2012) billion euro - the same amount was also stipulated in the National Reference Strategic Framework, where it broken down by Operational Programmes.

During the reference period, the absorption rate was much lower than the effect recorded during the following 3 or even 4 years.

Gradually, the amounts absorbed by Romania, from the EU budget increased considerably: 1.6 billion euro in 2007; 2.6 billion euro in 2008; 2.9 billion euro in 2009, 2.29 billion euro in 2010, reaching the amounts of 5.56 billion euro in 2013, 5.93 billion euro in 2014 and

5.49 billion euro in 2015. The amount requested from the European Commission between 31.10.2015 and 31.10.2016 was 4,096,501.212 euro.

These differences can be justified both by the slow project initiation and implementation process and by the progresses acquired in time, due to the learning process and the increase of administrative capacities (Gherghina, 2017).

If we take into account the entire length of the first financial period, Romania absorbed approximately 30.7 billion euro, from the non-reimbursable European Funds, broken down as follows: 18.43 billion euro absorbed before 31.12.2013 and 12.3 billion euro absorbed between 2014 and 31.03.2016 (Ministry of European Funds 2007-2013, 2016).

Although the achievements of the first financial period are acknowledged in the reference environment, we must underline the fact that not all of that period's targets were reached. For instance, Romania's Country Report for 2015 (European Commission, 2015) drawn up by the European Commission mentioned the fact that these funds were meant to help Romania improve its development level so that it could adopt the euro as a national currency, as of 2019. Joining the euro-zone has been a strong desire in Romania. However, so far, this has proven to be an unsustainable dream, and, according to the medium term projections, it will continue to remain unsustainable due to the major economic discrepancies existing between the Romanian state and the euro-zone countries.

The absorption level of the first economic period improved in 2017, as follows: within the Sectoral Operational Programme "Increase of Economic Competitiveness", the final absorption level was 100%; within the Technical Assistance Operational Programme – 100%; within the Operational Programme "Environment" –84.48%; within the Operational Regional Programme: 93.41%; within the "Human Resource Development" Operational Programme – 90.81%; within the Sectoral Operational Programme "Transport" – 81.07%; and within the Administrative Capacity Development Operational Programme– 100% (Ministry of European Funds, 2017).

We do not want to minimise the success of the projects implemented during the previous financial period. However, due to the tergiversations encountered in the effective absorption process, the official figures could only be quantified in 2017; while the 31st of March, 2017, was also the deadline set for submitting the application for the payment of the final balance, along with the final expenses statement, to the European Commission. Once the dysfunctions were remedied, 10 years after the first steps had been taken, the final absorption rate for the 2007-2013 Operational Programmes reached 89.08 %, according to the data provided by the MEF to the European Commission.

After analysing the factors and causes that kept the absorption rate of structural and cohesion funds to such low levels during the studied period (2007-2013), we put together the following centralising list:

- Dysfunctions found within the Management Authorities (MA): lack of transparency, political fluctuations occurred due to changes in the Government's composition or following elections; firing experts at various competence levels; supporting cronyism that had a negative impact, either by allowing certain people to occupy positions for which they were not professionally qualified or by declaring certain projects eligible, although they did not meet the compulsory criteria.

- A lack of highly skilled personnel, well qualified in the field of accessing and absorbing European Funds, was discovered among public servants, as well as a lack of self-confidence caused by their fear of making mistakes that might render projects non-eligible (during the elaboration stage) or mistakes that might lead to financial penalties (for the projects' flawed implementation). There were many occasions when the project was found to be inconsistent with the administrative and eligibility criteria, the idea was found to be irrelevant compared to the programme's objective; errors were found as well in the way the documentation had been filled in (financing applications, feasibility studies, technical

projects, cost-benefit analysis, necessary certificates and permits, obtained in obsolete formats, environment impact assessments, set-off reports, etc.).

- The high spread of corruption at all levels: from the elaboration stage, when projects were declared eligible, to the favouring of some contractors in the tenders (Public Auction) until the distortion of the elements at the final reception of the projects. Although the literature review prefers to use the term “dysfunctions” of the check and control mechanism, the irregularities found in the process of accessing European Funds led to fraud suspicions; in 2012, this prompted the EC to take exceptional measures, unprecedented at EU institutions’ level. In 2012, Romania was ranked among the countries with the highest levels of fraud (European Commission, 2013), along with Italy and the Czech Republic, the quantified amount of fraud money being 119 million euro. On the same note, the EC report dated 24.07.2013, on the “Protection of the EU’s Financial Interests – Fight Against Fraud” mentioned the fraud (corruption) in Romania in multiple contexts: the complexity of the irregularities found to be fraudulent, frauds committed during the pre-adhesion stage (including in the use of specific tools), amounting to de 38.5 million euro (European Commission, 2013), insufficient statistics to determine and follow the frauds and recover the prejudice and failure to implement the EC’s recommendations from 2011, in due time. The repercussions had a financial impact at the national level: Human Resource Development Operational Programme was completely suspended while other operational programmes were partially interrupted; The MA had had encounter difficulties in finding liquidities, which had a direct negative impact on the reimbursement applications’ set-off and, implicitly, on the funds’ absorption rate.

- The lack of major reforms (anti-fraud, bureaucracy-reducing reforms, etc.) that would contribute to the process optimisation.

- Excessive bureaucracy/ suffocating documentation (specific to state institutions) that needed multiple permits, approvals and signatures, doubled by unclear or ambiguous provisions stipulated in the specific methodologies or the Applicants’ Guide.

- The deficiency of real post-implementation supervision led to some projects being short-lived. For instance, in 2009, in the Municipality of Drobeta-Turnu Severin, Mehedinți County, numerous investments were made in the tourism infrastructure, via the financial mechanism named: “Territorial Cooperation Programme between Romania and Bulgaria”. Thus, the “Valea lui Dinu” Touristic Complex, built between 1985 and 1987 was rehabilitated and, by 2010, citizens could enjoy a new leisure centre. Unfortunately, this investment objective was only opened for two seasons.

- The specialised literature also mentions, in this context, the lack of coordination and the lack of a transversal interface, between the various programmes and projects implemented, which could have been homogenously connected, based on certain common elements. It’s true that this could have made the process more efficient but we don’t think that the improvement would have been major enough to increase the absorption rate.

- Lack of sustainability of some projects, which have proved difficult to maintain and not feasible. To support this allegation, we have chosen a high profile example: the ski trail built in Jina, Sibiu County. Measuring 560 m in length, equipped with a cableway and snow cannons, this ski trail was only functional for a few days after its inauguration, because it did not snow too often in the area and artificial snow was insufficient and too expensive to make. Thus, the project named: “Amenajarea domeniului schiabil din comuna Jina, arealul turistic Mărginimea Sibiului” worth more than 3 million euro, was only one of the multiple useless investment objectives completed during the first European financial period; in other words, fund allotted to unfeasible projects.

- Error loading operating system (MySMIS).

- The low rate of project eligibility was also marked by an immature consultancy market and a lack of project writing expertise among the applicants (this conclusion refers to the private sector).

European Funds absorption rate during the current financial period

According to the information published by the MEF, during the 2014-2020 financial period, Romania can access more than 31 billion euro, out of the total amount of approximately 464 billion euro, allotted for ESIF and EAFRD, for the above mentioned financial components. For the implementation of the Cohesion Policy (financed through FESI), Romania has at its disposal approximately 23 billion euro.

Just like in the previous financial period, the 2014-2020 interval has well defined items that have to be achieved.

The result that the EU desires to obtain through the absorption of its funds after 2020, targets an intelligent, green, connected, social Europe, that is close to its citizens, as well as a sustainable and integrated development.

Between 2007 and 2019 (November 30), the EC allotted 54.64 billion euro to Romania, via its Cohesion Policy and it received, from the Romanian state, 18.91 billion euro, as contribution to the budget of the European Community. After 13 years of EU membership, the audit reporting indicates a positive balance of 35.45 billion euro; these are European funds allotted to Romania, surpassing our country's own contribution. This amount of 54.64 billion euro received from the EC was used to set-off the expenses borne with the investment projects executed in Romania, as well as direct payments to farmers and other forms of European subsidies. Out of this total amount, 2.75 billion euro came from pre-adhesion programmes (PHARE, ISPA); these were funds absorbed by Romania starting from 2007. The bulk of this financial allocation came from operational programmes and from funds specific to the 2007-2013 programme period: more than 33.92 billion euro.

The on-going programme period - 2014-2020- is taking, at a smaller scale, the same route as the previous financial period. Thus, during the first years, the absorption rate was extremely low, i.e.: between 2014 and 2016, it did not even reach 5% over multiple financial instruments. The Romanian Authorities steered the discussions towards the fact that, during that time, they were still trying to maximise the absorption levels from the previous financial period and, according to the information provided by the MEF, in the Governing Report for the European Funds Portfolio, between November 2015 and December 2016, the absorption rate for this previous financial period (only) reached 81.73% in 2016. For this reason, the Romanian state was promoting, at that time, in the media, only the absorption rate recorded during the 2007-2013 financial period; this offered the ideal scenario for the Government, without revealing, to the public, the disastrous situation recorded during the 2014-2020 financial period.

Gradually, four years after the beginning of the financial period, the Romanian state started to implement and set-off payments for the fulfilment of certain investment objectives.

We are analysing, below, the hierarchy of absorption level recorded during the current financial period, according to the data provided by the EC (European Commission, 2020).

The absorption level recorded during the first year, 2014 was 0% as the Romanian authorities were still preparing, at that time, the legal framework, needed for the adequate implementation of projects. The first payments were made to Romania in 2015; these were insignificant amounts that placed the absorption rate below 1%. This situation continued until 2016, when the absorption rate reached 3%. The first significant changes in the absorption process started to become visible in 2017 - when the absorption rate was 12%. Then, it increased to 24% in 2018, to 28% in March 2019 (Ministry of European Funds, 2019) and it reached 34% towards the end of 2019. On 31.01.2020, the Ministry of

European Funds published its latest report on the level of European Funds absorption in Romania, the figure indicated being 38%.

The dysfunctions found during this financial period have largely been the same as the ones found during the previous period. There was, however, a particularity: the high level of corruption was not just preserved but it proliferated. Thus, in Special Report no. 6/2019, issued by the European Court of Auditors, Romania was ranked on the penultimate place in terms of correctness in spending European funds; in less subtle words, it was ranked second in terms of frauds committed with money coming from Brussels. The rate of frauds committed by the Romanian state with cohesion funds, reached 1.10% of the total amounts absorbed, falling within the same parameters as the ones recorded during the 2007-2013 financial period, when the defrauded amount was estimated to be between 200 and 337 million euro.

Conclusions

The following conclusions can be drawn from the both financial periods (2007-2013 and 2014-2020) experienced by our country (European Court of Auditors, 2018):

- The legal framework needed for the implementation of the financing sources, was adopted late in both financial periods.
- There were successive delays that created a domino effect with an impact on the moment when the allotted budgets started to effectively be spent. During the first financial period, the first amounts were set-off, to reduce the existing discrepancies and insure the necessary standards, 1-2 years after the programmes were initiated.
- The project implementation delays encountered in the first financial period, continued during the second period as well. There were a lot of postponements when the project applications for the 2014-2020 period had to be initiated because the effects inherited from the previous financial period (including the afferent set-offs) were felt until 2016. Practically, this meant that the two programme periods overlapped. In other words, although the new programme had already started, the Member States were still spending funds left from the previous period.
- The constant reviewing of the Operational Programmes raised questions about the soundness of the factual analyses used as basis for the programming process; this prompted the applicants to mistrust the permanency of the Applicant Guidelines.
- We've noticed that, the attempts made to improve the efficiency of the absorption process, were mainly focused on maintaining consistency with the existing legal norms in place, while the aim to achieve concrete results was not given the same attention.
- The last conclusion drawn is, perhaps, the most useful: following our comparative analysis of the two financial periods experienced by the Romanian State so far, we noticed the same major errors and dysfunctions, repeated in both cases: corruption, lack of transparency in the use of public funds, civil servants' incompetence (a possible effect of cronyism – which is a very widespread phenomenon in Romania), the lack of experts and specialists (a topic that is frequently discussed but this does not lead to any constructive solution related to an improvement policy/strategy).

We cannot claim to fully draw the conclusions of all experiences related to European Non-Reimbursable Financing, because we do not have a full, overall, comprehensive image of all the measures taken and the impact of each measure on the absorption rate, as the information provided by the Member State is insufficient. However, the main result of our analysis, presented above, is the fact that fund absorption has to be a means of achieving results and not a purpose in itself, as it is perceived and treated by the Romanian state.

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GLOBAL DIGITAL ECONOMY. BLOCKCHAIN TECHNOLOGY AND PUBLIC ADMINISTRATIONS

Adriana Grigorescu¹ and Andra-Nicoleta Bortea²

¹⁾ *National University of Political Studies and Public Administration, Romania*

²⁾ *“Valahia” University of Targoviște, Romania*

E-mail: adriana.grigorescu@snsipa.ro; E-mail: andrabortea@gmail.com

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Abstract

We are in the midst of a technology revolution, dominated by computers, the Internet of Things, digital economy and digital governance. Propagating new technology in all areas of life is shaping a new type of society, a new way of governance and a new public administration. The governments of the more developed states have begun to allow the implementation of new technologies in their administrative systems, in order to make them more efficient and to simplify the services offered to all citizens. It is a very important step in this technology revolution, probably the last step in this process, to integrate the digital economy into administrative systems. The digitization of the administration and the governance process implies a number of advantages that we cannot ignore, but these advantages are accompanied by a series of disadvantageous possibilities and unforeseen situations, which greatly slow down the digitization process. Blockchain technology is being discussed and successfully implemented in various fields. It is often associated with virtual currencies and online transactions, usually referring to branches of the private domain, being used mainly by large companies or influential businessmen. Given the numerous benefits of implementing the technology in as many of the moments of everyday life for the Romanian citizens, it is desirable to implement them in the public administration in the near future. It should become a priority the implementation of modern technology at national level, especially in the shadow of the latest global events, which prove the indisputable need for it, whether it is blockchain or not.

Keywords

blockchain, technology, cryptocurrencies, bitcoins, public administration, eGovernance

JEL Classification: H7

Introduction

We are in the midst of a technology revolution, dominated by computers, the Internet of Things, digital economy and digital governance. Propagating new technology in all areas of life is shaping a new type of society, a new way of governance and a new public administration.

The economic crisis has influenced consumer behavior globally and has contributed to the migration of large enterprises to the online environment, using Internet-based systems to increase efficiency, lower operating costs and the ability to operate in real time between different platforms (Oprescu and Eleodor, 2014; Lincaru et al., 2018).

Today, the digital environment is part of our daily lives, whether we like it or not. The tools that the internet and technology make available to us are part of our routine. For instance, applications from companies such as Uber, Lyft or TaskRabbit connect customers around personal services such as transportation. You can sell fruit from your neighbor's garden. In Oakland and Berkeley, you can buy a home-cooked meal from your own neighbors, and this are just a few examples (Scholz, 2016). The digitization of the economy is considered an essential driver of innovation, economic growth and societal change, but it represents a major challenge for the international tax system (Olbert and Spengel, 2017). The digital economy is not just an era of new or revolutionary business models, but rather the evolution of existing models, products and services (Bonnet and Westermann, 2015 in Olbert and Spengel, 2017). The key difference between digital and traditional economics, in terms of knowledge use and knowledge production, is the reduction of barriers using the Internet (McAuley et al., 2010). The digital economy refers to an economy based on integrated digital technologies (Harish, 2018). Currently, discussions in the economic field focus on the use of the online worlds and online platforms that allow transactions with such currencies. At the same time the digital governance should support the economic activities and create a friendly environment and a coherent legislation (Grigorescu et al., 2018).

Literature review

The most revisited works on the subject of new technology, for example “blockchain”, are some articles published online on specialized websites that offers information about technology and tech instruments. Even this movement of publishing scientific papers only in the online space, highlights the fact that the society already embraced the new ways of technology and is using it accordingly.

The Internet, in the end, has become the largest possible market of all: content of goods, capital, labor and information. More precisely, it is a new global economic space and a virtual reflection of economic globalization (Zekanović-Korona, 2014).

Around 2008, a new possibility in the digital world appeared, described in a bold work: “Bitcoin: A Peer-to-Peer Electronic Cash System” (Nakamoto, 2008). In this innovative work, Satoshi Nakamoto¹ presents an alternative version of online payments, based on the “peer-to-peer” version of payment, i.e. the elimination of financial entities and the creation of a direct link between the parties, which can be traced by them in a digital information chain. This type of online transaction is carried out without costs and without the intervention of third parties, based on the digital signature.

Blockchain technology is an organized form of storing information in the online environment. It is a digital database in constant development and storing of information. This information is usually represented by users' financial transactions. Transactions are fast and efficient and can be tracked by users (Alton, 2016).

A blockchain is a growing list of records that are encrypted. Each block contains a cryptographic trace of the previous block, a timestamp and transaction data. By design, a

¹Satoshi Nakamoto is a pseudonym under which the paper was published in 2008.

blockchain is resistant to changing data. It is an open, distributed registry that can record transactions between two parties effectively and in a verifiable and permanent manner (official site “blockgeeks.com”).

The name “Blockchain” represents the digital form that the system creates from the information collected. It can be said that the information entered by the users is formed in blocks. Several blocks of information are linked together by a chain. Each block represents a slice of financial transactions. When a new transaction occurs, a new block is created next to the previous one (Alton, 2016). The information gathered is not necessarily public. Users can set the desired level of confidentiality. Blockchain offers more freedom in transactions and shorter execution times as legal rules do not affect users, as they do not have to respond under the authority of a national government (Alton, 2016).

A blockchain is, in simple terms, a series of immutable records of data that are managed by a cluster of computers, which do not belong to any entity. Each of these blocks of data (i.e. block) is secured and linked to each other using cryptographic principles (i.e. chain) (official site “blockgeeks.com”).

Advantages of blockchain (Alton, 2016): transactions are fast; it is not based on the actions of other people, removing human errors that might have occurred; increased accessibility for everyone; increased protection of transactions; decentralized environment (transactions can be made anywhere in the world).

Disadvantages (Alton, 2016): is a new technology that experts still do not know how the world will evolve or affect in the coming years; high costs for creating the systems for this technology; the security systems are not infallible; there is no option for return or reversibility; human error is still possible, at the user level.

A blockchain does not involve transaction costs, but only the cost of infrastructure. This is a simple but ingenious way of transmitting information in a fully automated and secure manner. Part of a transaction initiates the process by creating a block. This block is verified by thousands, probably millions of computers distributed around the network. The verified block is added to a chain, which is stored throughout the network, creating not only a single record, but a unique record with a unique history. Forgetting a single record would mean falsifying the entire chain in millions of cases, which is practically impossible (official site “blockgeeks.com”).

Bitcoin is a digital currency that does not exist in physical form and operates independently, allowing users to use it in transactions, without having to resort to banks, in a simple and accessible way. The link between Bitcoin and blockchain is a very close one, with blockchain representing the infrastructure for Bitcoin. Bitcoin only works through blockchain technology, while the latter is not conditioned by the presence of Bitcoin (Alton, 2016).

Advantages of Bitcoin (Alton, 2016): this type of currency It cannot be counterfeit; cannot go through the inflation process, as a classic currency; users can trade any amount anywhere in the world; transactions have very low costs. Disadvantages (Alton, 2016): transactions with Bitcoin require user responsibility; transactions cannot be blocked.

As Bitcoin became popular, other cryptocurrencies began to develop (e.g., alt-coin) and appear on the market, producing competition and developing new networks to support them (Luther, 2015).

Bitcoin critics often say that its long-term goal of being an apolitical and valuable global store is unrealistic. It could be said that this currency could pose a threat to sovereign currencies, which would cause governments to close it, but this article (Lucian, 2019) mentions that this would be impossible. An argument in support of this idea is that Bitcoin is a decentralized network, which works permanently and does not have an abrupt end, like most platforms used today (Lucian, 2019).

Methodology

The hypothesis of the paper is: Blockchain technology is a starting point for the modernization of public administrations, and its implementation is increasingly necessary so that the national government can keep up with the important events of the society it is serving.

The research method chosen is the descriptive one, based on the specialized literature, verified by empirical procedure. By analyzing these studies and reports, I want to show the importance of implementing a new technology in public institutions, highlighting examples of good practices already in other states.

Results and discussions

States such as China and India have tried to ban the popularization and dissemination of this new technology, but without success. Internet-related industries present many difficulties with China's political economy (Hong, 2017). According to the example provided by US law enforcement institutions, governments cannot prohibit people from using Bitcoin, as it is a binary string inscribed on their computers, but can make it much more accessible and difficult to trade. The regulations in this regard would be comparable to banking restrictions, unlike anything else specifically created for the cryptocurrency industry (Lucian, 2019).

Around 2014, the focus shifted from Bitcoin to Blockchain technology behind the currency. People have realized that Blockchain can be separated from currency and can be used with other tools or other types of transactions in the online environment. The fact that it is a technology that presents confidence, intimacy and security, makes it suitable for any industry. However, the adoption of Blockchain in different sectors is still difficult, with a major change being observed in 10-20 years (Srivastava, Kumar and Saraswat, 2018).

Blockchain knowledge was named among the top ten employee skills in the near future, according to the most recent LinkedIn survey conducted in the Asia Pacific region (Chepkova, 2019). The opinions of over 4 thousand employees were analyzed regarding the learning of new skills that could be essential in the coming years. Specifically, it has been the fastest growing in Singapore and has been ranked in the top 3 in China, Japan, Taiwan, South Korea, Hong Kong and Vietnam.

However, the results of the report are not surprising. While there is still some controversy regarding cryptocurrencies and their regulation, the general attitude towards distributed ledger technology (also called shared ledger or DLT) is far more positive. The situation seems to be particularly favorable in Asia, where blockchain is enjoying government support, such as in Singapore, through the "Ubin" project, based on DLT.

The Ubin project has effectively restored the institutional infrastructure in Singapore by implementing blockchain platforms. The project is carried out by the Monetary Authority of Singapore in partnership with blockchain institutions and companies (official site "consensys.net").

In 2019, to demonstrate the project's applicability, the central banks in Singapore and Canada made the first blockchain-based digital currency transfer. The Monetary Authority of Singapore sent funds to the Central Bank of Canada without a third party (official site "consensys.net").

Currently, there are numerous cases of blockchain exploitation in the financial, retail, law, security and education sectors. Interest in the blockchain and its benefits continue to grow in different industries. This means that, in the near future, even more mainstream companies will be looking for experts capable of implementing blockchain solutions in their business models. IoT (Internet of Things) facilitates the sharing of devices, vehicles, buildings and others, by incorporating sensors connected to a network, which makes it possible to collect data and exchange it. Moreover, by integrating blockchain technology into the IoT architecture, an immutable register of shared transactions is created, without the need for a third party (Huckle et al., 2016).

Conclusions

Examples of machines with artificial intelligence that succeed people, are becoming more and more frequent. Although these robots will not take control of our lives very soon, there is a growing fear that they will soon replace us in our workplaces.

The general tendency to reduce workers to an undifferentiated mass that can be easily replaced is inherent in capitalist production relations, according to Marxist theory. It is in the interest of capital to have a working class whose abilities are as generic and substitutable as possible. Workers who have only generic skills are cheap to hire and can be easily replaced (Huwus, 2014).

Similar discourses on the implications of computerization for jobs, whether pessimistic or optimistic, have been articulated many times so far, the debate often being resumed by the latest technological developments (Valenduc and Vendramin, 2016).

This variant in which the non-specialized workforce would be successfully replaced by artificial intelligence raises many questions to the governments of the nations, the most ardent being the salaries of the people. A controversial solution is the existence of a basic universal income that ensures a minimum income for every citizen. The solution is imperfect and not just because it forces us to rely entirely on the government. Also, there is no unified decision on how to finance this, be it tax increases or other methods (Moeller, 2019).

Through cryptocurrencies, the quantum economy can define a financial network without borders, without cash, which operates on the basis of reliable mathematical calculation. Chances and uncertainties need to be “copied” in order for such networks to work at full capacity. Quantum quantification, despite being years away from being possible, makes a completely new paradigm likely. Problems of scalability and mass use could be easily solved as the computing power accelerates. Today, the real limit is our binary world (Lucian, 2019). The end result of this technological breakthrough would be a cashless financial network operating in real time. Such a global, decentralized system could accurately assess uncertainty and weigh the countless inputs present in an economy. The end result would be a trustless “super-computer”, which is not based on any location - a decentralized global network that would facilitate the free flow of money, as we treat information, today (Lucian, 2019).

Although it is a long way to go, it can be said that the blockchain sector will certainly play a major role.

At European level, there are some initiatives in this regard. Countries such as France, Germany and India are seeking to introduce blockchain technology into their financial systems, officially and on the basis of a legal framework.

In a motion for a resolution of 2018 (European Parliament, 2018), the European Parliament brings to the Commission important issues related to the benefits of implementing blockchain technology, and draws attention to the need to regulate it. There are also big differences regarding the digitization of the Member States and the need to reduce these disparities.

The European Parliament believes that digitization will allow a much more efficient and transparent exchange of information. Moreover, access to all necessary information would be created for logistics operators, manufacturers, laboratories, administrations and beyond (European Parliament, 2018). The Parliament encourages The Commission to work with Member States to adopt, among other things, appropriate information and communication technologies, to collaborate with relevant stakeholders to examine and develop a framework for resolving interoperability and compatibility issues between blockchain systems (European Parliament, 2018). It is hoped that the European Union will support and collaborate with stakeholders in the process of standardization and security of blockchain technology, to establish and regulate this technology mainly for industry and commerce (European Parliament, 2018).

Although in most cases the introduction of blockchain is discussed only in the financial services sector, the applications of this technology are much more diverse (official site “cisco.com”).

For example, in the health field, providers can use it to safely manage electronic medical records. Doctors can request permission to access the patient's medical history, then they can record new data, making them available to other network health professionals. In this regard, the Metlife Health Organization (Singapore) has turned its attention to Blockchain technology for storing all medical documents in a secure place (official site “tradesilvania.com”).

Another area where new technology can be introduced is electronic voting. Maintaining data integrity and voting fraud can be solved with Blockchain technology. There are public entities that already apply electronic voting. A government agency in Thailand (National Electronics and Computer Technology Center) is using Blockchain technology. The user data is transmitted directly from the voters to the polling stations without being fraudulent (official site “tradesilvania.com”). The same is true of Estonia, which voted on the Internet in 2005 during national elections (official site “e-estonia.com”).

Another possible use would be the agricultural field, respectively the land book offices. A large-scale implementation of blockchain technology in the land domain would mean significant logistical savings, eliminating the need for storage spaces and waiting time. Concrete details could be recorded about the time and conditions under which the property was transferred. Thus, any interested person could access the blockchain network to see the legal status of a building, without having to go through a bureaucratic procedure (“hotnews.ro”).

Analyzing all these possibilities regarding the most suitable sectors for the implementation of blockchain technology, it can be said that its adoption will be a very important point in the evolution of the government and in the future of public administrations.

At the national level, the situation of modernizing public services with new technologies is not as optimistic. Currently, in Romania there are very few institutions that can offer such services, despite the figures and results published online.

As we know, the global crisis caused by the spread of the famous virus on all continents is hindering the activity of the Romanian public institutions, especially those that have not adopted online petitioning tools. In such situations, when social contact is avoided, the possibility of administrations to provide online public services is crucial. Those entities that successfully accept and use distance work help communities and protect them at the same time.

For example, the use of online citizen registration platforms not only saves them time and resources, but also protects them against the spread of the virus to both petitioners and office workers. Moreover, the internal course of a petition could be conducted exclusively in the online environment, reducing the resource consumption of institutions and helping the environment, by using electronic signatures, online databases, online payments and smart electronic forms.

In Romania, there are currently several initiatives to use online tools in large cities such as: Alba Iulia – the program Civic Alert, whereby citizens make petitions and can check the status of tickets in real time on the City Hall's website (apulum.ro); or Cluj - the application "My Cluj", through which they can send their notifications directly to the City Hall. As of 2018, the city enjoys the existence of the first virtual public servant, Antonia, with the help of which Cluj residents can register 90 types of applications, from a distance, without physically moving to the general register of institutions (primariaclužnapoca.ro).

However, the rest of the counties of the country are not as open when it comes to using the online environment, being limited only to official communications on the websites of the institutions and to the use of virtual mail for some of the resolved petitions.

Given the numerous benefits of implementing the technology in as many of the moments of everyday life for the Romanian citizens, it is desirable to implement them in the public administration in the near future. It should become a priority the implementation of modern technology at national level, especially in the shadow of the latest global events, which prove the indisputable need for it, whether it is blockchain or not.

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SUSTAINABLE EVENTS, THE GATEWAY FOR ONLINE EVENTS

Daniel Moise¹, Amelia Diaconu², Svetlana Platagea Gombos³ and Silviu Diaconu⁴

^{1), 3), 4)} Bucharest University of Economic Studies, Romania

²⁾ Artifex University, Romania

E-mail: moisedaniel@mk.ase.ro; E-mail: diaconu.amelia@gmail.com

E-mail: svegombos@yahoo.com.sg; E-mail: sdiaconu@gmail.com

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Abstract

Events play a very important role in the development of any country, but any gathering of people does not result only in the economic and socio-cultural evolution of a city, region, but comes together with some drawbacks the carbon footprint and environmental problems that can badly and irreparable influence the ecosystem. Qualitative researches were deployed among direct audience that took part in different types of events, no matter the size or the type of the events. This research is aimed at discovering, on one hand, the degree in which the direct audience might influence event organizers to realize sustainable events and the steps needed to be taken in order that this could happen.

Keywords

Sustainable events, green events, waste, pollution, interaction, online events

JEL Classification: M30, O31, Q01, Q53

Introduction

The frequency and the intensity of events are increasing each year in most countries and cities, all around the world, no matter if they are sport events, religious, corporate, or non-corporate events, or events that are targeting internal or external stakeholders (Angheluta et al., 2019). MICE industry (Meetings, Incentives, Conferences and Events) has a growing trend as shown in Table 1, events organized in most representative cities. We can clearly see that the number of meetings per cities has doubled, or in the case of the capitals of Lithuania and Romania rose 4 and respectively 7 times. The general trend was the increase in organized events per cities. The international trend (ICCA, 2013) regarding the average number of direct audiences for association meetings is getting smaller, it has dropped from 1,253 participants per event, in the period of 1963-1967 to 424 in the period of 2008- 2012. Nevertheless, the rate, at which attendance is shrinking, is much lower than the rate of the growth in the number of meetings.

Table no. 1 Number of international meetings per cities from 2001 up to 2017

Year Country	2001	2010	2011	2012	2013	2014	2015	2016	2017
USA	478	623	877	833	829	831	925	934	941
Germany	301	542	626	649	722	659	667	689	682
U.K.	237	399	487	477	525	543	582	582	592
Spain	223	451	496	550	562	578	572	533	564
Italy	277	341	428	390	447	452	504	468	515
France	279	371	476	469	527	533	522	545	506
Japan	217	305	244	341	342	337	355	410	414
China P.R.	84	282	343	311	340	332	333	410	376
Canada	155	229	268	273	290	265	308	287	360
Lithuania	6	38	40	41	57	53	34	42	47
Romania	17	39	60	54	44	68	77	69	70

Source: adapted after ICCCA Reports: 2000-2010, 2012, 2013, 2014, 2015, 2016, and 2017

Literature Review

This industry is one of the fastest-growing industries and if it is properly used, especially in the case of organizing mega events, it can be a crucial synergy force of improving the economy, the infrastructure and the socio-cultural development. Local governments (Pereira, 2018) are increasingly justifying the hosting of mega-events for their legacy value, assuming that all local residents' benefit (Bran et. al., 2018) from those events. Events (Sungsoo & Jongwoo, 2016) attract visitors to event-hosting cities and further induce more people to visit even after the event has passed. The gathering of people means not only logistics problems, or even terrorist threats, events being seen as good targets for those who want to transmit a message through terror (Bodislav et al., 2019). Nevertheless, events can have a negative impact on nature, as most of these gatherings can produce a lot of waste (Bran et al., 2018)

We should not disregard the carbon footprint that is resulting as a consequence of creating, deploying and taking part in the event either by the individuals, organization or the whole community (Rădulescu et al., 2018). If the event's organizers are not obliged, or do not have norms or requirements to fulfil this task, it is very unlikely for them to appeal to green event checklists. Alternatively, creating and deploying sustainable events means reducing the costs. In general, bio-based and biodegradable plastics are more expensive than fossil-based plastics on a weight basis, bearing in mind that most bio-based plastics have a higher density that contribute to this higher price (Burlacu et al., 2019). Another factor contributing to the increase or decrease of fossil-based plastics is the fluctuant oil prices, while biomass prices are more stable. (Oever, et al., 2017)

Sustainability has become one of the main issues preoccupying societies and economies worldwide. Moreover, there is a growing (Caiado, et al., 2018) pressure to improve quality, efficiency, effectiveness and sustainability of services. It is an industry, which accounts for more than 50% of gross domestic product in the big economies around the world (Jianu et al., 2019).

The key elements of sustainable development that can influence society, economy and environment, presented in figure number 1 can contribute to a different extent. The foundations of the concept of sustainable development include (Kwasiborska and Stelmach, 2014):

- Economy – the benefits are gained for the general public, harmonized by social and environmental costs;
- Environment – the use at the minimum of the non-renewable natural resources, or even finding non-pollutant methods, or bio products, with the aim of decreasing the negative impact on the ecosystem;
- Society – improving the quality of life of the community by creating and developing new businesses and jobs.

The emphasis (European Commission, 2018) on economy associated with environment must lead to sustainable economy, or a viable world, while society and economy must lead to social equity, or a fair world, meanwhile society and environment must lead to local environment, or a livable world. We might state that the synergy resulted from suitability of social equity, sustainable economy and local environment results the sustainable development.

Other specialists consider that even Institutions play a very important role regarding sustainable development. For the reason that laws must be given in order to determine the society, organizations and all the stakeholders to adopt, or to act towards a sustainable development. The institutional criteria of sustainability depend on the (Čiegis and Gineitienė, 2008): justice within the frame of one generation and between different generations; international justice; integration of social, economic and ecological requirements; participation of all social groups and the entire community in the formulation and implementation of strategies.



Fig. no. 1 Key elements of sustainable development

Source: Kwasiborska, A., Stelmach, A., 2014. Analysis of Airport Traffic in The Context of Environmental Throughput, Transport Problems, Vol. 9 Issue 1

Events are created for the communities, with the help and support of the communities, and most of the times, the communities are those who are directly involved and benefit from the deployment of events (Costache et al., 2015). However, not all the times, events have only benefits, as it is very likely to encounter downturns like the construction of “white elephants”. The white elephant concept is (Turró and Penyalver, 2018) used to qualify public investments representing a severe misallocation of society's resources or expenditures that can be deemed to reduce the wellbeing of its future members. Nothing is (Robinson and Torvik, 2005) as depressing in a developing economy as the presence of white elephants seen as investment projects with negative social surplus, being a particular type of inefficient redistribution of resources.

The buildings constructed (Gezici and Er, 2014) for mega events become “white elephants” due to their inability to reach full capacity in the post-event period, as they have a high cost

for maintenance, and without public subsidy, they can not be financially viable.

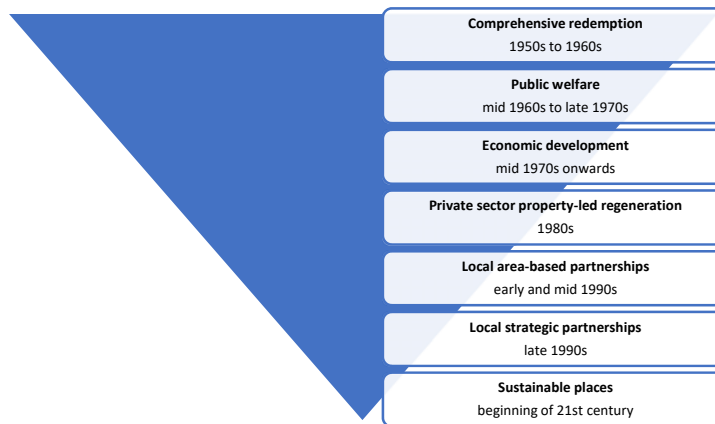


Fig. no. 2 Evolution of urban regeneration policy

Source: McDonald, S., Malys, N. & Malienè, V., 2009. *Urban Regeneration for Sustainable Communities: A Case Study, Technological and Economic Development of Economy*

Usually cities that host (deLisle, 2009) mega events like the Olympic games face the risk of the common Olympic hangovers of white-elephant projects. Many cities establish their policy objectives to host (Lindau, et al., 2016) mega events in order to thrive in economic development, urban regeneration, to reposition themselves in the global tourist market, remodeling the transport and service infrastructures, create vibrant cultural quarters and establish a network of high-grade facilities (Androniceanu et al., 2017).

Although the benefits of hosting mega events are clear, the appeal of hosting this kind of events seems (Maiello and Pasquinelli, 2015) to be decreasing. Recently four European cities have recently dropped off the bid for the 2022 Winter Games: Oslo, Stockholm, Lviv and Krakow. The most common concerns for the opportunity cost are not taken into consideration only the financial, but also the social and environmental costs and they determine the officials to withdraw, or abstain from the bidding process (Ioniță, et al., 2009). Some of the direct consequences involved are eviction and gentrification, thus intensifying the existing inequalities. The inequalities amplify especially when there is (Zhang and Zhao, 2009) a lack of common desires between the residents of the city and the city government.

In order to overcome these issues, the cities officials around the world should follow (McDonald, et al., 2009) the steps of the UK communities, as represented in figure 2, from comprehensive redemption up to becoming sustainable places, that emphasis that an urban renaissance should be founded on the principles of design excellence, economic strength, environmental responsibility, good governance and social well-being, resulting economic sustainability and environmental sustainability, as well.

Research methodology

We have conducted a qualitative research to find out the degree, in which the stakeholders of the events adopt a sustainable way of living, and if they are also concerned about how green the events that they attend are, and also to see if they are reluctant towards online events. The primary data was collected through in-depth interviews from respondents being part of Generation Z, or iGeneration as they were named by Cheryl Russell (Horovitz, 2012), or Digital Generation (Francis and Hoefel, 2018). They are digital native, being used to social

networks, and are heavy internet users from early ages. We have conducted semi-structured in-depth interviews, with 16 respondents with ages between 22 to 25 years old. We wanted to discover what their main opinions and perceptions are with the view to being eco-friendly, but at the same time, how they regard sustainable and online events.

Some of the most important objectives of the research that we took into discussion are:

1. how and in which manner the respondents adopt a green attitude towards nature, companies and brands.
2. the steps that they take in order to be eco-friendly as much as possible.
3. the events, that they took part in, were sustainable or green events.
4. instruments and techniques used by organizations to promote the fact that their events are green

Appealing to qualitative research, the primary data can be collected both through in-depth interviews, or focus group. The sampling was done using the simple random method, selecting members of the generation Z, being more open-minded and heavy internet users and on the same time, being more preoccupied by the environment changes and worldwide pollution. The recruitment of the respondents for the achievement of the information gathering stage was done by identifying those who take part in events and have accounts on several social media networks. An interview guide was used, divided into 3 main sections: environment issues and the respondents' behavior towards ecology, sustainable events and the percentage in which they are organized and perceived by the participants, and the possibilities of taking part in different online events using the technology at hand. The interview guide has been built to solve the decision-making issue from which this research has begun and to achieve all of the proposed goals. In the first module the participants were asked open questions regarding their attitude towards being eco-friendly, or having a green behavior. Most of them answered that they acknowledged that we have only one planet; the resources are limited and most of them non-renewable ones and considering this we all must take good care and we should protect the environment and the ecosystem, in general. Some of them said that they usually purchased eco and bio products, despite the fact that they had to pay more for them. They prefer to acquire led light bulbs and install smart home technologies as long as their budget allows them. They admire companies with zero waste production, or the organizations that recycle. It was mentioned IKEA Company that started a very interesting campaign of renting some type of furniture. Others mention that they take part in activities like cleaning a protected area that is full of garbage, like a forest, or even planting trees, recycling the garbage selectively and at the same time, reducing the consumption of water and energy, also not littering. They mention Earth Hour movement, when they switch off the lights for an hour. Although a study shows (Pelau and Acatrinei, 2019) that with more modern technologies such as frequent internet use, decreases the energy consumption. They would like to use electric scooters, cars or using bicycles, and some of them use this alternative means of transportation already. What can be most important to be mentioned is the fact that some of them even promote and teach their peers, meaning colleagues, friends, but also their relatives, neighbors to adopt a greener behavior. The majority of the respondents sustained that they were influenced by public figures, researchers, mass media VIP's, their peers, NGO's, the companies where they work, and less by the public policies and national legislation. Some of the reasons mentioned as an excuse for not adopting a greener behavior, was lack of information, time and even the deficit of infrastructure of recycling offered by the authorities. A respondent mentioned about the perceived and planned obsolescence that makes products, especially electronic devices to be replaced in an accelerated rate. What is even more interesting, not only planned obsolescence is taken (Durand, 2017) in discussion by the European Parliament, but also software obsolescence, "which plays a major role in the lifespan of most household devices". Products should be more user friendly and easier to be repaired and upgraded and more durable or robust, while the customers should easily order

spare parts to repair them by themselves “at a price commensurate to the nature and life-time of the product”. Consumers would like to benefit (Cerulli-Harms, et al., 2018) from durable and easily repairable products as they will also be regarded as ‘high-quality products’ and ‘money cost-savings’ in the long-term. In 2014, there was issued a report where it was discovered (European Commission, 2014) that 77% of the Europeans would like to try to get broken appliances repaired before buying new ones. In 2016, the world generated (Baldé, et al., 2017) 44.7 million metric tons of e-waste and merely only 20% was recycled through appropriate channels, with a total value of raw materials present in these appliances and devices at around 55 Billion Euros. Despite the fact that 66% of the world’s population is covered by e-waste legislation, it seems it is not only enough to enforce, implement, and encourage a green behavior, but this might be backed up with more strict laws that should heavily fine not only companies, or organizations, but also people.

In the second module, the participants were asked if they took part in sustainable events and the strategies used by the organizers to promote this fact. It was quite a surprise that almost all of them argued that companies do not promote, or do not put an emphasis on advertising whether their event is green, or not. This might seem to be either they do not want to advertise regarding this aspect, or they do not organize green events. Only the events realized for their own employees, like trainings or seminars seemed to be green events as it is the policy of the organization, but it was only the case of multinational companies. Another question was if they know or heard what ISO 20121 stands for, or the terms like sustainable events, green events. Unfortunately, none has heard, or known what they stand for. ISO 20121 - Event sustainability management systems, and was first used (www.iso.org, 2010) for the Olympic Games held in London in the year 2012. All organizations that deploy events of all types or sizes can integrate sustainability or durable development, not only in the activities that they carry on, but also the activities of their suppliers, and what is most crucial leaving behind a positive heritage. Otherwise, events can also generate some negative side effects with a considerable impact on economic, social and environment level. From the point of view of sustainability integrated in CSR means especially the current actions, event sustainability which can include benefits such as (Ajeti & Concio, 2016):

- Financial profit by creating jobs and increase the investments in SME’s enterprises.
- Positive reputation regarding not only the image of the company, but also towards all of its products or services brands.
- Environmental innovation by putting pressure on the research and development of innovative techniques and technologies to better use the resources available.

The respondents reflected and concluded that events, and especially mega events and hallmark events, generate economic development and region growth, but at the same time they have a greater negative impact on the environment as well. Especially when the organizers do not change their policies or the way, they manage to realize events. Some of the participants in the qualitative research admit that the change must come first with them and then with the others. They have heard about The Youth Strikes for Climate movement started by the Sweden’s Greta Thunberg pupil, being the first youth climate striker. Some of their main demands are (Morley, 2019) to be declared a climate emergency and priorities the environmental reforms and the school curricula should teach them about the disadvantages of climate change. Regarding the participation at an event, it is not in their power to enforce drastic changes. They can only choose to attend, or not to. They do not have enough power in forcing the event organizers to create and deliver a green event. As event consumers, they think that they cannot appeal to a pull strategy, as they do not have the right tools and instruments. There must be a law to be enforced that events have to be as green as possible. At the European Union level, some steps have already been taken regarding the pollution with plastic products. One million of the planet’s eight million species of plants and animals, are

threatened (Gerretsen, 2019) with extinction by humans, with alarming implications for human survival (Fears, 2019), according to a U.N. report on biodiversity and ecosystem report released in May 2019. Until 2021 (Leung, 2019) single-use plastic items will be banned, including plastic straws, cotton bud sticks, food containers and other plastic products that are not reusable. All the countries from the European Union can choose (Reuters, 2019) the methods of reducing the use of such plastic products, but they have to reach the target of collecting and recycling at least 90% of beverage bottles by 2029.

Conclusions

As we have discovered, the members from Generation Z, acknowledge their power regarding the environment and behavior towards recycling. They want to change not only their own behavior, but also the attitude of their peers, colleagues and family in order to adopt more eco-friendly actions. Event organizers should put more emphasis on sustainable events and promote the ways they create and deploy events with respect towards nature. Environmentally friendly and sustainable responsible practices regarding creating and deploying events must be a long-term industry movement, not just a trend. As we can notice, steps are being taken, but more restrictive and severe laws must be enforced, not only for companies and organizations, but also for individuals. At the moment, around 60 countries in the world have (Kiunguyu, 2019) banned or partly banned single-use plastic bags including China, France, Rwanda and Italy. In Kenya, in 2017 a very drastic law started to be enforced (Alitash, 2019), with penalties for distributing, selling and even producing single-use plastic bags, which means either 4 years of prison, or a \$ 40,000 fine. Although there are international standards like ISO 20121, Event sustainability management systems, they must become mandatory worldwide, if we really want to change our carbon footprint and to have a cleaner planet to leave behind to our children.

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THE IMPACT OF DIGITIZATION ON THE LABOR MARKET PATHS AND DEVELOPMENT OPPORTUNITIES

Roxana Sârbu¹, Ghenadie Ciobanu², Maria Loredana Popescu³ and Victor Adrian Troacă⁴

¹⁾³⁾⁴⁾ *The Bucharest University of Economic Studies, Romania*

²⁾*INCSMPS, Bucharest, Romania*

E-mail: sarbu.roxana@ase.ro; E-mail: gciobanu01@gmail.com;

E-mail: popesculrtn@yahoo.com; E-mail: adrian.troaca@gmail.com

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Abstract

The digitization process of the Romanian society faces a series of essential problems. The gap of economic development at the level of the regions can be solved by digitizing the regional economies, the companies from the development regions and the institutions of education, health, public administration culture, the development of a precision agriculture and the digitized ecological economy. Therefore, this process will have a massive impact on the development of the labor market. In this article we aim to discuss issues related to the impact of digitization on the labor market, with the advantages and disadvantages of the digital revolution on the economy, society and first of all on human resources.

Keywords

Digitization of the economy, labor market, digital revolution.

JEL Classification

E2, O12

Introduction

The National Strategy on the Digital Agenda for Romania (2014) reflects the needs and also implicitly the vision of Romania regarding the development of the ICT sector. Mainly, there are 3 major areas of action: public administration and its modernization, the private sector and indirect support of its competitiveness, and the large population by ensuring access to ICT-type resources and digital inclusion.

A horizontal component regarding Romania's needs is on cyber security, which affects all areas of action equally. At the private sector level, Romania's vision is primarily aimed at developing the e-Commerce sector to ensure a retail sector that can be subsequently integrated into the single digital market. At the macro level of the population of Romania, the most

important need is to improve the degree of use of the broadband infrastructure, both regarding the total population and in the form of the urban-rural relationship (Bran et al., 2018). First field of action – *e-Governance, interoperability, security of computer networks and systems, cloud computing and social media*. Second field of action – *ICT in Education, Health and Culture*. Third field of action – *e-Commerce, ICT and research-development-innovation*. The development of Romania's economy in line with global trends implies long-term development of the online commerce sector. The implementation of the actions in the third field of action generated in the period 2014-2020, an estimated impact on the Romanian economy of about 3% growth in the level of GDP and of 2% in terms of jobs. The transition to a new paradigm, namely from the information society to the virtual society, has had a major impact on the way in which individuals carry out their activities, communicate and share their knowledge through collaboration (Rădulescu et al., 2018).

1. Evolution the access of Information Technology in Romania

Romania is growing in attractiveness on outsourcing, being behind Bulgaria, Poland and Lithuania. A.T. Kearney Global Services delivered a report regarding the attractiveness of outsourcing destinations and placed Romania 18th in the world in 2014 - up 7 positions compared to 2011 - Romania still outperformed in 2014 by states such as Bulgaria (9th place), Poland (2nd place) or Lithuania (15th place). According to the study Access of the population to information and communication technology in the years 2011 - 2014 the use of ICT products registered significant increases, in 2013. Regarding Romania as a representative project in the e-inclusion area was "Access to the ICT and improvement of digital competencies". Population access to information and communication technology in 2014-2019, National Institute of Statistics, Romania. From a regional point of view, during 2010-2014 there is an obvious increase in the tendency of internet connection at the national level, from 38,9% in 2010 to 54,4 % in 2014. From a regional point of view, the highest percentage was in the households in the Bucharest – Ilfov region, almost 2 households out of 3 have internet access from home, increasing from 61,9 % in 2010 to 76,7 % in 2014, followed by the Western region increasing from 44,4 % in 2010 to 61,3 % in 2014. The lowest number of households with internet connection is in the following regions South West Oltenia -32 %, in 2010 and in 2014 with a value of 47.1%, South Muntenia 32, 9% in 2010 and reaching 33,1 % in 2010 and 46,1 % in 2014, staying on the last place, followed by the North-Eastern region 33,1 % in 2010 and 48,3 % in 2014 (Ciobanu, G., et al., 2015).

According to the methodological specifications for the study conducted by the National Institute of statistics, the source of data is the Statistical research on the population access to information and communication technologies which is conducted yearly, in argument with the Regulation of the European Council and Parliament no. 808/2004 related to the communitarian statistics on informatics society. Below we present, the Structure of households that have access to the Internet at home, according to the occupational status of the head of household, total house holding at national level and by development regions.

Table no. 1 The share of households that have access to a computer at home, by residence area, in total households in each residence area

Means of resident	Ani								
	2007	2008	2009	2010	2011	2012	2013	2015	2017
	%	%	%	%	%	%	%	%	%
Total	31,4	35	42,2	44,2	46,8	52	55,8	61,9	65,6
Urban	46	49,4	56,2	59,2	61,7	66,4	69,8	72,2	75,9
Rural	11,9	16,1	23	23,7	26,6	31,7	37,5	48,4	51,9

Source: www.insse.ro/

The Internet access has kept an increasing trend, the number of subscribers per thousand inhabitants reached 497.6 the increasing trend was also reflected in the number of Internet users per thousand inhabitants, thus, in 2013, there were about 173 users, compared to about 162 in 2012. The number of mobile phone subscribers has been increasing, which was visible from the point of view of complexity and quality of service.

Table no. 2 The share of households that have access to the Internet at home, by residence area, in total households from each residence area

Means of	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
resident	%	%	%	%	%	%	%	%	%	%	%	%	%
Total	20,5	27,3	35,1	38,9	43,3	49,3	52,9	54,4	61	65	68,6	72,4	75,7
Urban	33,6	42,5	50,8	54,3	59,3	64,6	68,3	68,3	71,9	74,5	77,5	81	82,5
Rural	3	7,6	13,5	17,8	21,8	27,7	32,8	36,3	46,6	52,3	56,9	61,5	66,7

Source: www.insse.ro/

In Chart 3 we present the *Proportion of the households with internet access at home, according to the occupational status of the head of household, on types of connections used and residence areas.*

Table no. 3 Types of Internet connections in households

Broadband connections	2014	90,9	91,5	91,2	93,2	90,5	83,8
	2015	96,4	97,3	93,5	100,0	94,9	99,6
	2016	96,8	97,7	92,5	98,4	96,0	98,3
	2017	97,3	97,3	96,9	97,0	97,4	97,3
	2018	97,5	98,5	93,6	97,8	96,9	95,5
	2019	97,9	98,6	97,6	99,3	96,4	99,4
Other narrowband connections	2014	9,1	8,5	8,8	6,8	9,5	16,2
	2015	11,6	11,8	14,6	4,4	10,1	13,1
	2016	11,8	10,8	11,8	*	9,4	7,5
	2017	9,4	11,1	7,2	9,3	6,8	11,0
	2018	12,5	13,5	14,2	*	9,4	19,2
	2019	9,7	10,8	7,9	*	8,5	10,8

Source: www.insse.ro/

From this table we observe that the level of internet access of the population by occupational status. Employee level in urban area is higher in 2019 60%, rural 44.1% Self-employed in urban areas is 3.5% in 2016, and 4% in 2019. In rural areas, it is 20.7% in 2016, with a slight increase to 21.4% in 2019.

The current economic conditions have made a high number of enterprise moves towards internet-based system to increase efficiency, reduce operating costs and support the capacity of operating in real – time between various platforms (Jianu et al., 2019). New products and services fully based on the internet have appeared and continued to evolve and they can complete with the existing ones.

2. Literature review

The author (Sümer, 2018) highlighted that new digital technologies are called over a wide area called Industry 4.0. The rise of digitalization, robotics and intelligent automation has a massive impact on market development, including a great impact also on the labor market (Burlacu et al., 2019). As new digital jobs are created, due to the impact of technological changes, many jobs are destroyed. Replacement of jobs by robots, intelligent machines, digitized and connected processes already have a great impact on the labor market, a phenomenon that leads to mass unemployment (Androniceanu et al., 2017). Therefore, in this article the author: *“It aims to highlight the potential changes in employment and job losses due to new technologies in Turkey.”* The paper reviews the literature review on: *“the effect of new technologies on jobs, skills, tasks, occupations and employment. An analysis of the time, of the occupations in Turkey is carried out to highlight the occupations that could be replaced with Industry 4.0, and thus may lead to mass unemployment”*. Therefore: *“in Turkey was established a framework for substitutable and complementary occupations. In the final remarks, it will be said that there will be considerable losses in some professional categories with routine tasks, both in manual and cognitive jobs”*. In other jobs, new technologies have a complementary effect that could lead to job creation. It has been suggested that Turkey can better achieve the negative impact of Industry 4.0 by fully analyzing the problem, improving training and modernizing skills and promoting jobs in technology and creativity, new areas such as cultural and creative industries. In the author's opinion: *“Technological changes have always acted as job destroyers and job generators.”* To cope with the tsunami of new technologies, Turkey urgently needs a comprehensive project for analysis, mapping and designing employment policies and occupations that Industry 4.0 could have both positive and negative effects. Sociological research can be done, at least in the leading sectors, regarding potential investments of technological capital, to see the effects that replace and complement new technologies (Burlacu, 2011).

3. Digitalization and Industry 5.0

Vocational education and training must be remodeled and modernized through the efforts of governmental and non-governmental stakeholders. Eder (2017) argues: *“from studying the phenomenon looking for the impact of automation on jobs has started the discussion on how to best define the target of automation”*. Should they be jobs, or should they be tasks, as the following authors have pointed out? Both methodologies illustrate part of the problem. Jobs are regarded as the sum of a set of tasks. Over time, the nature and number of tasks change, technology facilitates change. Over time, the nature of jobs changes just like tasks (Ioniță et al., 2009). The state of technology has led to a new, more software-oriented direction: mechatronics. This description seems reasonable in a wide range of jobs. For example, the job of a car mechanic changed with the advancement of the job for a mechatronics did not exist years ago. Jobs will include more technological aspects. In the author's opinion: *“The definition and interpretation of jobs is likely to change.”* Two authors presented difficult

conceptual obstacles to the designation of "safe jobs". "The report reaches a similar conclusion after reviewing a number of different studies on this topic. The study looked at the debate between tasks and jobs as being free. The study claims that jobs represent the sum of a set of tasks. These tasks change over time, changing the sphere of a work. The authors argue that: *"The future of work depends on several factors, on the long-term competitiveness and on demographic developments. One of the main factors of technological change in the foreseeable future is digitalization, and the center of this development is the production and use of digital logic"*. Circuits and its derivative technologies, including computer, smartphone and internet will evolve (Ionita and Burlacu, 2009). Smart automation will not cause general job losses, but can lead to considerable changes in the structure of employment. Considering the case of Germany, it is indicated that in the future it will be difficult to tackle structural problems of the labor market, such as skills shortages, persistent unemployment or inequality in terms of employment. Due to the increased demand for new tasks, skills gaps between the demands of the jobs and the skills of the workers, they can also appear to a greater extent. Premises for re-entry into the labor market they will probably be larger in the future. Lack of solid evidence, policy implications can only address general issues. The authors claim that: *"In the coming years, additional incentives must be examined or even obligations to enter the classic insurance system"*. Regarding new forms of work, such as group work, remuneration standards are another important issue. Instead of large and detailed regulations, platforms that allow for continuous customer assessment would be an option to establish a "fair" workplace. The strong tendency towards digitization-induced employment must be addressed by different means, such as professional infrastructure to support self-employed workers from the beginning. Social dialogue is an established means to accompany ongoing technological changes, as previous experience in Germany shows. The social partners have more opportunities to establish support measures. Possible areas of interest in this context are the establishment of a new culture of lifelong learning, the initiation of new ways to finance further training, to deal with conflicting interests regarding the regulation and management of working time, progress on humanizing work and ensuring adequate data protection for workers. In the opinion of the Heinrich (2018): *"As Industry 4.0 brings many changes to the workplace, workers will have to make these changes. This could mean that workers may be required to undergo further training or education"*. Moreover, one third or 35% of the skills that are considered important in today's workforce changed by 2020. The first jobs that will disappear will be repetitive jobs, both in the services sector and in the industry sector. Workers will have to develop or improve their skills that machines do not have (yet). Creativity will become one of the first three abilities, while critical thinking and complex problem solving are two others. Emotional intelligence will become one of the first ten abilities, while quality control will not even be in the first ten. It is obvious that some of the skills, which were considered less necessary, are rinsed on the first scale. With the increase of employment in the branch of architecture, computers, engineering and mathematics, it is obvious that skills that match those families of jobs will have a greater demand.

In the opinion of Schäfer (2018) the fourth industrial revolution is different from the previous three. This is because machines and artificial intelligence play a significant role in improving productivity and creating wealth, which directly changes and challenges the role of human beings. The fourth industrial revolution will also intensify globalization. Therefore, technology will become much more significant, because regions and societies that face positive the technological impact of the fourth industrial sector the revolution will have a better economic and social future. This article argues that the EU can play an important role in developing an environment suited to the fourth industrial revolution, an environment that is vibrant and open to new technologies.

The fourth industrial revolution is significantly different from its predecessors because of the combination of factors: (a) integrated circuits on microchips, (b) memory storage units, (c)

networks that help improve communication; (d) software applications that directly connect with consumer needs; and (e) the ability of the sensor that allows artificial intelligence to analyze most things that were previously accessible only to the human mind (Friedman, 2016). The article first describes the historical technological development and then provides a brief overview of the lessons that can be learned by countries with different policies. Finally, it offers concrete ideas for EU policies. Nahavandi (2018) supports the opinion that: *"Staying on top is getting harder and harder because of the rapid growth and change of digital technologies and solutions based on artificial intelligence. The world of technology, mass customization, and advanced manufacturing face a rapid transformation. Robots are becoming more and more important as they can now be coupled to the human mind with the help of the brain-machine interface and advance in artificial intelligence. A strong need to increase productivity, without eliminating human workers in the manufacturing industry, imposes punishing challenges on the global economy."* To combat these challenges, this article introduces the concept of Industry 5.0, in which robots interconnect and interact with the human brain and work as a collaborator instead of a competitor. The authors outline a number of key features and concerns that each manufacturer may have regarding industry 5.0. It presents some evolutions made by researchers for use in industry 5.0 applications and environments. The impact of Industry 5.0 on the manufacturing industry and the general economy is discussed economically and on productivity level, where it is argued that Industry 5.0 will create more jobs than it will eliminate. In the study *„Skills for Smart Industrial Specialization and Digital Transformation“* (2018), it is shown the situation in the EU regarding the presence of policies, initiatives and strategies in support of smart industrial specialization and digital transformation at city, regional and national level, as well as those who fostering the development of high-tech skills and future professionals. The fourth industrial revolution brings major disruptions to the scale at which are currently taking place the improvement and retraining efforts and therefore, it is likely to expand these potential gaps. Our work contributes to the successful modeling of workforce transformation in the EU by developing a common vision of high-tech skills and future professionals and designing actions to encourage them. The breadth of the future professional reflects the individual's willingness and ability to collaborate across industries, sectors and disciplines. The depth of the future professional refers to the depth of industry skills and knowledge related to the industry and sectors that the individual has.

Conclusions

As the conclusion of this article we make a series of summarized ideas, by which we believe that we could manage to solve some important issues. We consider that jobs are the sum of a set of tasks, over time, the nature and number of tasks change, technological development is promoted.

Jobs are unlikely to remain within the scope of job descriptions for the current period. It is possible to change the impact on daily hierarchies and businesses. The technological departments of the companies will see increasing investments, which will become costly during potential mergers. The professional training of the employees may require large continuous investments and it will stimulate the outsourcing solution even more.

Some jobs with a high degree of uniqueness can be promoted with the help of new technologies and creativity that is widely used (in cultural and creative industries). The reforms, transformations with a change of attitude, caring for the people, with prudence and wisdom will represent key factors.

The decision makers need to be aware of these trends in order to handle them intelligently and efficiently. Education will need to be rethought and will require investments. An important emphasis is placed on the first quarter of a person's life, after which minor corrections will be filled with the professional activity or complementarities and it will mark

its future. Vocational training, webinars will become important even in technological skeptic countries. Education and lifelong learning create resistance. Countries in Europe and around the world will face increasing pressure and will have to respond with perspective and long term overview. The respective policies will focus on labor market reform, investments in infrastructure, education and competitiveness.

The case of Germany highlights four main areas of concern that need to be concentrated: the continuous development of skills, smart regulations for employment, policies to prevent the labor market biases, and complementary role of social dialogue.

Human resources within companies may be affected, as the rapid availability of external workforce can reduce incentives for firms to train their staff. The incentives for freelancers towards continuing vocational training could increase the employability and professional development.

There are no indications that digitalization can be a major threat to the labor market as a whole. The extent to which the workforce will be able and willing to cope with these fascinating new digital, nano-technological, ecological and eco-innovation technologies is very important.

Education will play a priority role for the future development of the industry and for the personal development of the population. Universities and other educational institutions must keep up with market trends and technology to meet market needs. On the contrary, people will slow down the development that can lead to rising unemployment and slowing the development of the economy.

The professional future refers to the depth of industry skills and knowledge related to the industry and the sectors that the individual has. Our conceptualization of high technology skills or hard skills is mainly focused on programs, learning projects that combine high technology skills with specific complementary skills.

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THE SUSTAINABILITY PARADIGM OF VALUE AND ENTROPIC APPROACH OF ECONOMIC SYSTEMS IN THE IDEAS OF PAUL BRAN

Carmen Valentina Rădulescu¹, Florina Bran², Dumitru Alexandru Bodislav³
and Sorin Burlacu⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: carmen-valentina.radulescu@cam.ase.ro; E-mail: florinabran@yahoo.com;
alexandru.bodislav@gmail.com; E-mail: sburlacu@amp.ase.ro

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Abstract

The Romanian professor Paul Bran at the University of Economic Studies from Bucharest (1965-2006) introduced the notion of value in the economy by analyzing the entropic approach and also evaluating the concept of negentropy.

Keywords

entropy, negentropy, economic value, sustainability.

JEL Classification

O12, Q01

Introduction or need for a sustainable future

The relationship between man, environment, and economy has been a concern for the specialists trying to decipher the future of human society in order to manage them (Bran et al., 2018). Dozens of concepts have been launched in relation to the evolution of the economy, of human society, and of the environment. Only in the second half of the 20th century did the quality and integrity of environmental factors become serious objectives.

Between 1970 and 1980, within the Roma club were developed a series of socio-economic concerts, therefore launching a set of paradigms (organic growth, etc.), and stimulating the appetite for the search of new theoretical approaches.

The emergence of new concepts or the adaptation of already existing ones at a national level, for example, in which the realities of the social, economic and political space from the beginning of the 21st century are integrated and where the phenomenon of globalization finds its place, where the existence of some states considered as failed, or in financial difficulty, and major geopolitical and geo-economic manifestations, policies specificities to the

emerging states, the dominant role of the large transnational corporations in the field of economy that have their own evolution strategies being predominantly profit oriented.

Of the dozens of concepts of human society evolution including economy as the engine of society, the concept of sustainable development was developed under the aegis of the World Commission on Environment and Development, having as coordinator Gro Harlem Brundtland (1987), endorsed by the UN General Assembly and recommended as a guide for governments in their activity. At least 26 versions of the concept have appeared in the coming years, in conjunction with the concrete conditions of some countries (Androniceanu et al., 2017).

The concept of sustainable development has spread rapidly, being supported by the international institutions, reaching a common language in the School's Curriculum also, becoming a tool for drawing up really useful evolution strategies, creating an interest for civil society. For illustration, on June 10, 2014, 331,000 posts on the concept of sustainable development were recorded on the Internet, which denotes the positive evolution of the concept, supported by the aspirations of the society to foretell its future in a world full of uncertainty and complications of all kind.

In the last 30 years, other conceptual schemes for the evolution of the relationship between man-environment-economy have been proposed, such as the following:

1. The Case of Hypothesis (James Lovelock, 1979)
2. The concept of deep ecology (Anne Naes, 1979)
3. The Medea Theory or the Suicidal Planet (Peter Douglas, 2009)
4. The concept of human development (PHUD, 1992)
5. The concept of survival (Lester Brown, 2008, Florina Bran, 2011)

To their concepts were added the works of Professor Paul Bran, "Economics of value", "Management by value", which bring theoretical novelty by appealing to the notion of entropy that it uses in the analysis of economic processes being identified with the potential of natural resources.

Professor Paul Bran, in his work "Management by value", starts from the premise that: the law of value - entropy requires that the economic processes (production, consumption, distribution, exchange) as well as the processes specific to human society and those of regeneration and protection of the natural environment to be carried out within the limit of the economic potential.

In this formulation, Professor Paul Bran associates the resources with the information, the informational society thus created being able to intervene on the natural origin entropy.

The statement is in line with James Haishitt's statement that "In an industrial society the strategic resource is the capital ... In our new society, the strategic resource is the information, as Daniel Bell first stated". Between the two approaches, there is a connection between Nicolae Georgescu - Roegen and Paul Bran, respectively the emphasis is placed on the value of entropy, from the anthropocentric acceptance - the pleasure to live - to the ecocentric acceptance - saving of natural resources, on account of adding value to the Economic information, the last variant approaches the sustainability with the hypothesis that at a constant population numerically the negentropic potential can be continuously improved, giving the chance that the productive potential of the natural resources can be saved.

1. The entropic approach to economic processes

The authors set out to showcase the concept of Professor Paul Bran completing the gallery of concepts developed by Nicolae Georgescu - Roegen, by presenting the human-environment-economy relationship and defining the future directions of human civilization.

The society's evolution concept in general, of the economic processes in particular, brings as a novelty to the other concerts the following elements:

- reduces the number of criteria used to define the concept, the nature used, that of entropy is integrative for all the components necessary for the production process and for the whole diversity of the environmental impact,
- defines the evolution of an economic process according to the low entropy potential, highlighting the purpose, closing the cycles of economic evolution,
- The entropic analysis of economic processes uses a natural law from thermodynamics applied in practice,
- the transformation of the entropic potential (low entropy) into high entropy, during an economic process is irreversible, thus the notion of evolution of the economic processes appears, the economic life cycle, the entropic reversibility not being possible,
- The notion, the quality of sustainability is economically viable only in the case of open economic cycles in which the potential of low entropy (natural resources and energy) is infinitely quantitative and the entropic accumulations are minimal.
- A sustainable economic process is characterized by the predominance of renewable natural resources as a raw material and the use of the sun's energy to complete the low entropy potential. An economy so organized was called a bioeconomy.
- it is possible to manage the entropy (of its transformation process) by reducing unnecessary non-economic consumption (military spending, parasitical spending) and by increasing the efficiency of the yield of entropy transformation.

2. Entropy and negentropy

The instrument developed for this purpose received the name of negentropy, identified with the information used in the economic processes that acts to reduce the quantity of entropy in order to obtain products and services with the same degree of utility (reducing the degree of energy per unit of product).

Negentropy, according to Paul Bran, It is generated by the innovative spirit of man, by the talent, the tradition, the Intelligence of the personnel involved in the economic processes, by the quality of the organization processes, by education and the culture of the society.

The entropic approach to the economic processes, proposed by Nicolae Georgescu - Roegen and continued by Paul Bran by highlighting the place and the role of negentropy in the evolution of the economy, in general: can help to shape the elements that will lead the human society towards finding sustainability.

In the works published by Paul Bran, the three conceptions regarding the nature of society were emphasized. Like any new approach, the law of entropy applied to the economy has met followers (Boulding, Yashary, Miesiuk, Wade, etc.), opponents (Palinko, etc.) or passed unobserved.

An interesting position is held by Florina Bran, who says that as long as there will be the memory of the words Entropy and Economy, the name of Nicolae Georgescu-Reogen along with Paul Bran will be remembered and honored.

The authors' belief that the entropic approach to economic processes can be included among the several dozen concepts regarding the future of the economy.

Some applications of Paul Bran's concept have materialized in economic research in Romania and the Republic of Moldova:

- Outline strategies for enhancing natural resources, respecting the principles of the entropic approach,
 - Elaboration of the value-entropy theoretical model to lay the basis of value management.
- The wide-ranging work of Professor Paul Bran also had the quality of a handbook for students from economic universities. Outlining the concept of the entropic world in order to facilitate a comparison with other concepts in a world of specialists would determine the students' understanding of the concept, but also the practical implications from this perspective.

The entropic approaches through the value theory realized in Paul Bran's books are discussed as a continuation of Nicole Georgescu-Roegen's approach for explaining the processes in the current economic world.

Paul Bran said that we need to raise awareness of the depletion of primary resources, energy, in relation to population dynamics, the emergence of the consumer's society, etc.

In the new paradigm of the economic processes approach, inspired by the thermodynamic concept of entropy, Nicolae Georgescu-Roegen reconsidered the law of value as it was known in the classical / conventional economy. Paul Bran, in the works "Economics of value" and "Value management", specifies the role of the value-entropy equation. A contribution to the theory of value-entropy also belongs to Paul Bran, who proposes "The general model of the theory of value-entropy" as a novelty to the concept of concrete economy.

The model can also be considered as a methodological tool in the analysis of economic systems. The model of the entropy-value proposed by Paul Bran gives the possibility to highlight, during the entire evolution cycle of an economic process, the entropic accumulations of a drawing type, the model becoming a point of connection between the economic space and the natural environment.

The general model of the value-entropy theory can also be understood as an opportunity for the economic research to bring the model proposed by Paul Bran to the quality of methodological instrument for routine economic analysis. At the same time, there is room left for theoretical development, finding ways in the entropic approach of economic processes of externalities (positive and negative) of entropic capital, of profit as the sole economic "attractor" for the large transnational corporations that shape the global economy.

3. The entropy-value in Paul Bran's vision

Paul Bran leaned with great passion on this field of dysfunctionalities - degradation of the environment - in trying to formulate an economic theory that would allow to explain the human-environment, economy-environment relation, in order to obtain some useful knowledge in the decision-making process. He notices the need for a new value paradigm, but also the difficulty of adapting it. "The road to a new paradigm began before 1989, when, dealing with the measurement or financial distribution of the value, I noticed numerous issues regarding the economic theory of that period in explaining the economic reality, as well as great dysfunctions (unemployment, pollution, economic and social imbalances) that have developed in society, both in our country (where we used work-based value theory), as well as in countries that use utility-based value theory (marginal value).

Paul Bran takes the first step to continue the new theory of economic value by specifying the physical support of value.

Paul Bran explains the discrepancy in society compared to nature through its activity. Man has deliberately fought against nature. Thus, Paul Bran pointed out in the work "Management by value", that the individualization of man within nature brought us only the victor's solitude. I found, once again, that the most dangerous things are... victories! And the victory against Nature, prepared regularly, including economic theories, is no exception.

The cosmetic adaptations of the theory regarding the anomalies that are increasingly obvious to the economic reality no longer help neither the theory nor the practical activity that it uses. It is necessary to have an in-depth reinterpretation of the phenomenon in order to obtain the value according to the laws and exigencies of Nature's sciences, understanding the economics of value, which represents a connection between the economy and the physics of value."

According to Paul Bran, the definition of value is the basis of economic sciences and represents the genetic code for the entire construction of the economic theory and practice. "Starting from the many deviations of the theories of value, and in particular of the theory of value based on work and of the theory of utility, we have come to the conclusion that the way of looking at value must be radically restructured."

The research undertaken and the results presented in the work “Economy of value” (1991) have led to a new way of looking at and understanding value.

3.1. The Theory of Entropy Value

According to Paul Bran’s opinion, “Value is a transformed form of low entropy’s natural potential, existent in nature in the form of substance, energy and information. This potential is subject to successive transformations and preservations, both within the processes of the economic type (production-consumption), as well as within the processes that exists in the natural environment (photosynthesis, metabolism), and in the social environment (social life, education, research, culture, etc.)”, and the mechanism of obtaining value cannot be understood and driven outside the general laws of nature, being part of nature.

In these conditions, economic science must open up and at the same time subordinate its scientific achievements to the physical, chemical, biological and social field.

The value, in Paul Bran's conception, “is a form of created matter, an objective existence that behaves according to the laws of nature. It is the food of all living and non-living systems in the economy, society, and increasingly, even components of the natural environment.”

The road to a new paradigm of sustainability was aimed at finding new criteria for defining value, entropy, etc. Respecting sustainable consumption requires a mechanism for obtaining and managing value and entropy.

“Among scientists, relatively few, but remarkable for the durability of their works that dared to escape beyond paradigms and helped to propose their rethinking to build the theoretical foundation for the eco-economic universe, we find the late Professor Paul Bran. Perseverance, skill, discipline, optimism, dedication, creativity, were invested by Paul Bran to explore, correlate, synthesize, analyze, evaluate and create an original model Theory of Entropy Value (TVE) that can underpin solutions to the dysfunctions resulting from disregarding the complexity of interdependencies in the human-economy-environment triangle.

Conclusion

The work of Professor Paul Bran can be considered a treasure to the Romanian economic science, the knowledge provided allowing to adopt an innovative perspective to solve the key challenges of the contemporary world.

"From the government to the most modest company manager, from the teacher to the artist, from the individual to the political parties, the care of value must be the compulsory supply chain for every decision. Through the social and economic organization’s model it must be encouraged to attract environmental potential, the society and previous economic processes " (Paul Bran).

Our existence and evolution cannot be separated from the context of the relationship between nature and economic evolution.

The new approach involves changing the paradigm in the economy, consumer reaction, notions of balance between nature-society in the concept of sustainability, rational and sustainable management for today, but also for the future.

For young researchers, the works of Nicolae Georgescu-Roegen and Paul Bran can be a departure stage, a professional start on an arrow of time that could prove fruitful for innovative economic thinking, so necessary for solving the deep crises of contemporary society.

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PUBLIC POLICY IN THE AREAS OF ENVIRONMENT AND ENERGY

**Dumitru Alexandru Bodislav¹, Carmen Valentina Radulescu², Florina Bran³
and Sorin Burlacu⁴**

^{1) 2) 3) 4)} The Bucharest University of Economic Studies, Romania

E-mail: alexandru.bodislav@gmail.com;

E-mail: carmen-valentina.radulescu@eam.ase.ro;

E-mail: florinabran@yahoo.com; E-mail: sburlacu@amp.ase.ro

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Abstract

Environmental policy was adopted at the Paris European Council in 1972. It pursued the balance between sustained economic growth and the need for Community environmental policy measures, aiming at creating a Europe that is resistant to change. This paper presents the European policy on the environment and on energy sector and also Romania's view and procedures on the subject.

Keywords

public policy, environment, energy, sustainability.

JEL Classification

F64, F68

Introduction

The title of "medium" was introduced in 1987 by the Single European Act, having as objectives:

- Conservation of environmental quality
- Protecting human health
- Ensure a rational use of natural resources and their conservation

The environmental policy is based on four principles:

1. The precautionary principle that represents an intervention instrument when there is uncertainty about a factor that can affect human or environmental health, coming from an action or policy, the measures being non-discriminatory and proportional to the problem, from this principle deriving from the other three:

2. Prevention
3. Correction

4. The "polluter pays" principle by which measures are applied when the prevention or remediation of problems arises. For example, those dealing with the transport of hazardous substances, which are discharged to their destination in natural environments, will take preventive measures in case of imminent dangers to the ecosystem, having to bear the related expenses.

Since 1998, the integration of environmental concerns has taken shape in the field of several policies, being an important framework and in recent years has made amazing progress, for example in the energy policies through the "energy-climate package of the European Union" and the creation of competitiveness of the low carbon economy by 2050 (Rădulescu et al., 2018).

The EU climate energy package involves the following:

- 20% reduction of EU greenhouse gas emissions compared to 1990 levels;
- 20% improvement of EU energy efficiency;
- 20% of EU energy comes from renewable sources (wind, solar, biomass, etc.)

The role of this package is represented by:

- These "20-20-20" objectives are aimed at combating climate change, increasing the EU's energy security and enhancing its competitiveness. These are also key objectives of the Europe 2020 strategy for smart, sustainable and inclusive growth.

1. 2020 action plan of the European Commission

The European Commission and the European Parliament have launched an action plan for 2020 by 2013, which involves protecting nature, increasing ecological resilience, sustainable long-term growth and efficient use of resources, stimulating the reduction of carbon dioxide consumption. The "Sustainable Development Strategy (SSD)" was an answer to these needs, being formulated in accordance with the "Lisbon Strategy" internationally, in 2006 being revised and adding the internal dimension that aims to promote unemployment and create an environment with new jobs, this leading to increased human well-being, environmental protection and cohesion.

In addition to the "SSD", there is also the "Europe 2020 Strategy", which is pursuing economic growth, a factor influencing social inclusion, being a cause of the formation of the "resource efficient Europe" strategy, which has as its central objective the efficient economy through saving resources and reducing emissions. A final strategy is the "European Union Biodiversity Strategy" which aims to control and combat the decline of biodiversity and the degradation of the ecosystem.

Also, the "Aarhus Convention" represented a multilateral environmental agreement, which implies that the European Union and all the Member States give the public the 3 rights of involvement:

1. The right to information about and about the environment, information held by the authorized authorities
2. The right to participate in decision-making on environmental issues
3. The right of access to justice in case of violation of the other two

The implementation of all policies is part of the national, regional and local environment. One of the major problems of the ecosystem is the fight against climate change, an area that has always been a priority for energy and environmental policies (Angheluta et al., 2019).

Considering the current situation of heating with values between 1 ° C and 6 ° C, due to the massive deforestation, the burning of fossil fuels and the activity of agriculture, we need new additional policies. According to the "Stern" report, the cost of action against climate change would cost 1% of world GDP annually, generating a higher level of health and rational energy use. Also, the cost of inaction could be between 5% -20% of world GDP annually.

Types of changes:

- Water rationalization
- Crop rotation
- Use of drought resistant crops
- Planning and public awareness.

The "Paris Agreement" aims to establish efforts to maintain global average temperature rises, trying to maintain above average pre-industrial levels by 1.5 ° C. Thus, the first half of this century should be reduced greenhouse gas emissions, in the other half to reach the target of 0. The support will come in the case of underdeveloped countries and island states, this support being of a financial nature but also in the field of quality improvement (Rădulescu et al., 2018).

2. Energy policy

Energy policy is a challenge of the European Union which concerns issues such as the continuous increase of import dependency, limited diversification, the energy market in terms of price increases and their volatility. This policy pursues measures to achieve an integrated market and ensure security of supply in order to extend the sustainability of this sector (Burlacu et al., 2019).

The main objectives of this policy:

- Ensuring an internal energy market and interconnection in the sector
- Secure energy supply
- Energy efficiency and conservation
- Decarbonizing the economy in accordance with the "Paris Agreement"
- Promoting the renewable energy sector
- Promoting the technologicalization in the sense of allocating the resources necessary for the research-development, creating a competitive environment

Secondary objectives:

- 40% reduction of greenhouse gas emissions, the comparison point being 1990 levels
- 27% increase in the share of renewable energy in total consumption (GREEN ENERGY)
- Improving energy efficiency by 20%
- Interconnection of at least 15% of electricity systems

Each Member State has a duty to present its energy and climate plan every ten years. These plans also provide a political vision for the horizon of 2050, while ensuring compliance with the Paris agreement.

In terms of efficiency, everything consists of reducing energy consumption and waste, each of the leaders of the European Union has set in the plan a reduction target, a somewhat common objective with a value of 20% by 2020, the measures being a specific step and sustainable sourcing on lower import costs and increasing competitiveness, bringing the term "efficiency" to the forefront when it comes to goals.

Renewable resources are composed of wind, solar, hydroelectric, geothermal, biomass and biofuels. These largely contribute to reducing greenhouse gas emissions and diversifying the energy supply, making the uncertain price market less sensitive. However, when it comes to nuclear energy, there are a number of controversies in view of the disasters created by it, although it has a positive impact on reducing greenhouse gas emissions. European Union legislation aims to create a safe space for the safety standards of nuclear power plants and ensures that all waste produced by nuclear atoms is disposed of and handled under maximum safety conditions.

3. The case of Romania

It seems that in Romania, the current problem is represented by the management of waste, thus the problems encountered at the level of environmental policy implementation (EIR) are identified according to the European Union legislation as follows:

- Improving compliance with the legislation on waste and urban waste water
- Improve coordination and strengthen the administrative capacity of the competent authorities and agencies in the application of the legislation

Three issues discussed in July 2018:

- Waste management
- Waste water
- Improving air quality

Thus, following the low levels compared to the predictions presented in the report for 2017, Romania is in a position not to reach its 2020 targets by 50%.

When it comes to the "circular economy" of Romania, we must be able to define ourselves this concept. The circular economy represents a model of production and consumption that has the characteristic of repeating the process with the purpose of durability over time of the materials or products used, the form being the following sharing-reuse-repair-renovation-recycling. The population must be informed mass on circular economy and therefore to promote full measure.

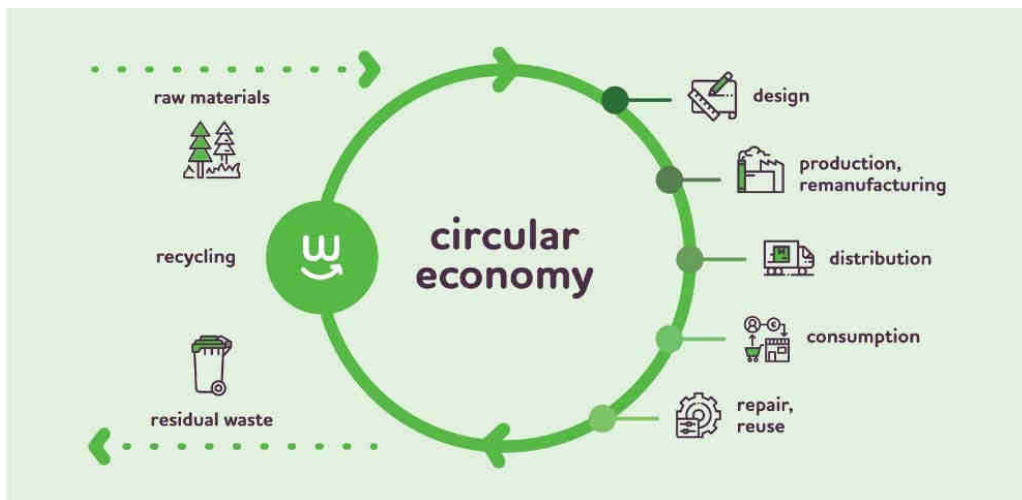


Fig. no. 1 Circular economy

Source: MyWaste, <https://www.mywaste.ie/the-circular-economy/>

Water quality problems have always existed, according to the Accession Treaty, Romania had to apply the water treatment directive to increase the degree of drinking water and the quantity of drinking water. The lack of administrative capacities and the lack of theoretical and technical knowledge in the field make the Natura 2000 network affected, nature conservation being a major problem of Romania. The energy and transport sectors decrease air quality by using fossil / solid fuels at household level, some of the measures being (i) optimization and restructuring of the energy system, this being possible by creating new types of renewable sources and switching to natural gas; (ii) limiting crowded traffic; (iii) other measures to control and prevent pollution.

The circular economy of Romania represents a weakly developed sector, "confirmed by the authorities in a conference on this topic in the autumn of 2017". Also, productivity of resource utilization was among the lowest, together with Bulgaria and Estonia, about 0.33 EUR / kg

(EU average 2.04 EUR / kg). The "polluter pays" principle is one of the recommended measures, as well as subsidizing the recycling sector.

The growth rate of employees in the environmental field increased between 2011 and 2016 from 130,000 people to 164,358 people, this increase being followed by a decrease in 2017 to 147,710, according to specialized studies. Although Romania has access to European funds and other support measures for the environment sector, the most developed measures are applied by third-party organizations. It seems that these implications expressed through indicators are important in demonstrating the awareness of the transition to the circular economy. By the end of 2018, Romania had 24 products and 19 licenses registered in the European eco-labeling system, out of a total of 71,707 products and 2,167 licenses at EU level.

When we talk about the efficiency of the SMEs, we consider the low level of awareness and the need to comply with the regulations in the environmental practices, we notice that the increase of the awareness level is given by the big investments of the powerful financial companies to develop the degree of reconciliation. The eco-innovation indices are to be noted that Romania ranked 27th in the scoreboard, accompanied by the score of 18 percentage points, an increase over 2010. All these results are the result of energy saving measures and reduction measures at minimum of waste, the weak point being the lack of investments in the annual turnover for the efficient use of resources.

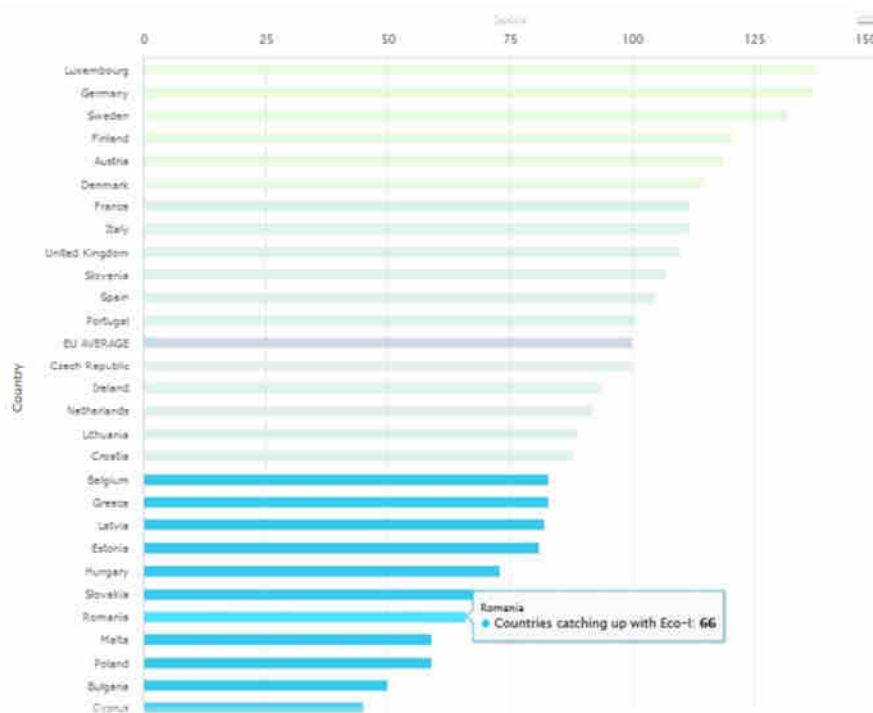


Fig. no. 2 Eco-Innovation action plan

Source: Environment, Eco-innovation action plan,
https://ec.europa.eu/environment/ecoap/indicators/index_en

The actions for the future are:

1. Ensuring the specific political framework, promoting a sustainable strategic vision and an effective approach for integrating sustainable development;
2. Increased support, especially through education and training.

And the waste management rate is a challenge of Romania, according to the complete implementation of the policies and the Union legislation in the field of waste. The recycling rate stagnated in 2013, but we observed an increase in incineration, the rate of waste disposal in 2017 being 70%, all being expressed as municipal waste per capita (272 kg in 2017).

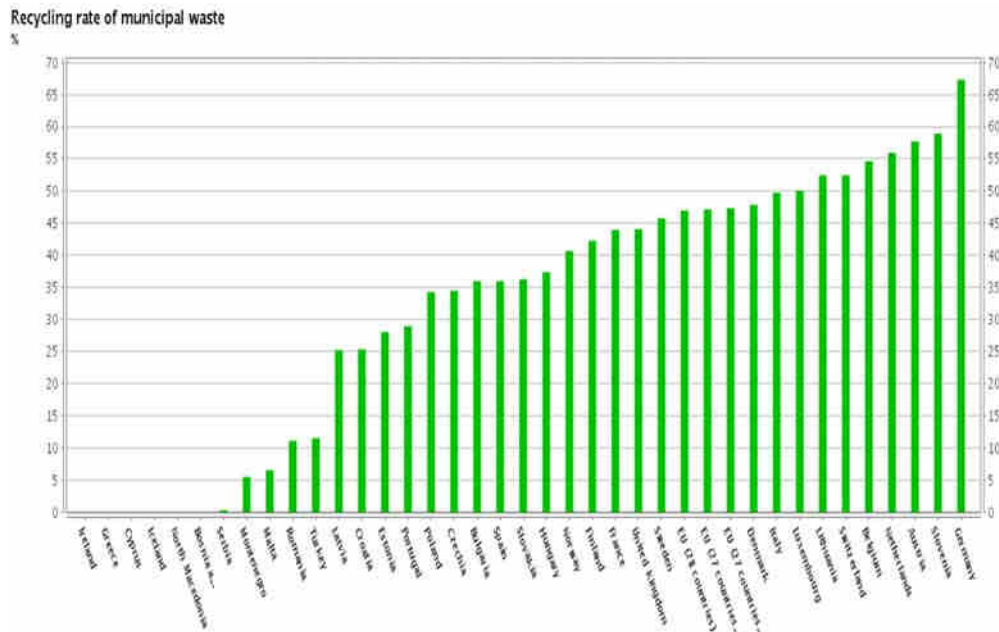


Fig. no. 3 Recycling rate of municipal waste

Source: Eurostat – Recycling rate of municipal waste

According to Article 14 of Directive 1999/31 / EC, the large volume of waste represents a threat to Romania, first of all because of its storage capacity, but also with the legislation on waste. The whole situation is characterized by an indefinite legal framework, the county plans being still in application plan, the absence of the specific tools for waste disposal, but also the nonconformity of the existing deposits.

Looking at greenhouse gas emissions, we can see that Romania had lower emissions than its annual targets, for 2020, the main objective being to avoid the increase to over 19% of 2005, the sector that mainly contributes is the transport and constitutes the main cause of air pollution in cities. Other sectors targeted in the plan are agriculture, water resources, infrastructure and urbanism, industry, tourism, forestry. The elaborated gas emissions plan is carried out for the period 2016-2030, being a fight against climate change.

Conclusion

The ecosystem needs policies and strategies for the development and improvement of green infrastructure, Romania having to create a country page on biodiversity through the European Information System, this contributing to the evaluation of the European Union Strategy in 2020. All of these are aimed at creating green partners. in urban areas and green belts around cities. They also include the estimation (i) of the natural capital in which Romania has made progress in 2016 and 2017, through commercial and biodiversity platforms, (ii) identifying invasive alien species, controlling or eradicating the priority and managing biodiversity disturbance, (iii) protection of the soil which represents an extremely fragile finite resource, but (iv) protection of the marine environment.

Sustainable cities, whereby the European Union estimates that all urban areas will expand until 2050, urban areas being a risk factor for people's health if they are endangered. They are encouraged to become cleaner from the point of view of greening, through prizes, such as "Green European Capital", "Green European Leaf" or "Green City".

Romania has ensured that at least 5% of the national allocation of the European Fund for regional development will be dedicated to sustainable urban development. For example, Oradea was one of the seven cities that applied for the "European Green Capital" award in 2018.

The ecological taxation was an important factor, the revenues obtained by Romania from environmental taxes being at a level close to the European Union average, the taxes representing about 8% of the GDP, the average being 5.99%. We can also say that in 2015, fossil fuel subsidies were the highest price, at a level of \$ 14 billion, subsidies being after taxation, considering price differences and associated negative externalities. The fuel market has made progress, the gas tax rate being only 7% lower than diesel, in 2005 it was 31%. Romania's programs for scrapping and purchasing new vehicles with more recent pollution rules or even purchasing electric vehicles have the role of reducing CO₂ emissions.

Making good use of European structural and investment funds are meant to achieve environmental goals and create an optimal environment by mobilizing policies. The creation of new jobs, economic growth, promotion of innovation, protection of the environment and inclusion are objectives that Romania still has in mind to comply with the programs of the European Union, receiving annually EUR 23 billion from EU sources for cohesion policy. There are four programs funded through the European Regional Development Fund (ERDF) and the Cohesion Fund, but also two programs funded by the European Social Fund, one being for youth employment. A total of EUR 7.1 billion is allocated to the environment under cohesion policy, another program not being on the agenda. The Large Infrastructure Operational Program and the Regional Operational Program are managed by the Ministry of European Funds and the Ministry of Regional Development.

The program "Horizon 2020", has subsidized Romania since 2014 with amounts of maximum 55.5 million Euro for projects submitted regarding environmental problems. The "LIFE" program has financed 68 projects in Romania, 22 focusing on environmental protection and 42 on its conservation, and the other 4 focusing on communication and information, with amounts in the years 2014-2017 of up to EUR 3.5 million, a project. important being "Connect Carpathians", aiming to connect bear and wolf populations with a regional network of sites. Priority actions will remain the mobilization of investments to combat waste, encourage efficient collection and recycling, reduce air pollution, manage water sustainability issues, conserve resources and develop green infrastructure. It also aims to better prepare, manage and prioritize the projects of EU funds and increase the degree of absorption.

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THE URBANIZATION IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Marius Constantin Profiroiu¹, Mihaela Diana Oancea Negescu², Sorin Petrică Angheluță³ and Petruț Cristian Vasilache⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: profiroiu@gmail.com; E-mail: mnegescu@yahoo.com;

E-mail: sorin.angheluta@gmail.com; E-mail: cristian@vpcpartners.ro

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Abstract

The sustainable development of a society also depends on the evolution of the population. The level of education of the members of a community influences the economic development of an urban community. The lack of human capital leads to imbalances in the labor market. Highly developed regions are polarized around developed urban areas. The respective regions are marked by high degrees of economic and social development. The article presents an analysis of the level of education of the population in the developed urban areas of the member countries of the European Union. The promotion of sustainable development can be achieved by people with a high level of education. Under these conditions, the importance that must be given to human resources increases. Also, another indicator of development whose evolution is analyzed is the degree of urbanization. Urban areas influence the efficient use of human resources. A high degree of urbanization makes the urban potential better utilized.

Keywords

Educational attainment level, degree of urbanization.

JEL Classification

I25, O18

Introduction

Urban development envisages an interdependence between social, cultural, economic and environmental dimensions. Belonging to an urban community implies involvement both economically and culturally (Xie et al., 2020). Population growth, poverty and migration, along with waste and water scarcity, are aspects that urban communities should consider when developing sustainable development strategies. Demographic growth creates pressure on the environment. The degree of development of urban areas is increasingly dynamic. The expansion of cities can lead to environmental degradation. In order to reduce environmental pollution, urban communities play an important role. Sustainable development refers to both

social and economic as well as human aspects. In urban areas, increasing the importance given to social inclusion and quality of life influences the degree to which individual well-being is ensured. Also, people's resources and daily living are influenced by the quality of life and the quality of the environment. Their degradation can increase pollution and cause damage to the environment. Urban development must take into account the concept of sustainable development defined by the Brundtland Report. Thus, the needs of the present can be met, but the desires to satisfy their own needs by future generations must not be compromised either. The way in which the products are made, but also the way in which they are consumed, should not affect future generations. At the same time, the life of the population in the urban environment is influenced by climate change. Environmental problems can also occur due to the increase of population density in urban areas. All these aspects influence the degree of urbanization.

Increasing the degree to which resources are used can lead to the orientation towards sustainable development of an urban area. Urbanization, by increasing the population, leads to an increase in the consumption of goods and energy, but also of waste. The business strategies of the companies change as a result of the introduction of new technologies. The launch of new products and services is more advantageous for companies in the urban area. Increasing the size of cities and population density influence both their sustainability and liveability (Bush, 2020).

Literature review

At European level, new technologies have led to changes both in the labor force and in the field of education. The development of urban communities can be achieved through investments in education. The growing needs of technologies have led to an increase in the level of qualification of human capital (Burlacu et al., 2019). Acquiring the skills required in the labor market can be achieved through the implementation of new vocational education and training programs (Profiroiu et al., 2019). In this sense, lifelong learning is becoming more and more important (Cedefop, 2018). The emphasis on knowledge increases with the implementation of new manufacturing technologies. People with a high level of qualification are increasingly looking for employment (Bodislav et al., 2019). The tasks that employees must fulfill are becoming more complex. For this reason, there was a need to update the skills (Costache et al., 2015). Non-involvement in this process can produce different degrees of development of urban areas.

Investments in research, as well as the capacity for innovation of human capital, influence the processes of production and lead to economic growth (Castagna et al., 2010). Those urban areas where the job offer is higher allow for higher levels of qualification (Rădulescu et al., 2018). The flexibility of education and training programs is becoming a necessity. The existence in a community of a high percentage of people with a high level of education is influenced by the level of investments in education programs (EC, 2017b).

Globalization influences the educational, economic and social processes (Burlacu et al., 2018). Each urban area must be specifically addressed so that interventions lead to the development of that urban area (UNESCO, 2016). Depending on the share of the population living in urban areas, the administrative units are classified as follows: cities, towns and suburbs and rural areas (EC, 2016; EC, 2017a). Cohesion policies promoted by the European Union aim to reduce the social and economic differences between its regions (EC, 2019). Uncontrolled urbanization influences the environment of cities, contributing to the manifestation of climate change in the respective areas (Wan et al., 2020).

The urban environment is considered to be oriented towards those industries that do not create pressures on the environment (Bran et al., 2018), which have a lower energy consumption, with reduced greenhouse gas emissions (Hao et al., 2020). But nonetheless, urban areas also have the great advantage of providing both efficient housing and transportation. Also, urban

areas provide the labour force and infrastructure needed to carry out economic activities (Torres-Martinez et al., 2020). Urbanization also affects agriculture. Urban expansion and urban enterprises can put pressure on agricultural producers (Satterthwaite et al., 2010). In most developed countries, one consequence of industrialization was the transformation of urban land. These aspects have contributed to the manifestation of economic opportunities (Fan et al., 2020). A reduced entropy is determined by a limited availability of natural resources. Thus, changing economic conditions in urban areas should allow the manifestation of economic interactions (Bran et al., 2014).

Methodology of research

The article addresses sustainable development from the point of view of education. Thus, an analysis of the level of education of the population in urban areas in the member countries of the European Union is offered, for the period 2009-2018. The comparative situation for population from cities and population from towns and suburbs is highlighted separately. Also, an analysis of the evolution of the degree of urbanization for the member countries of the European Union was carried out, for the period 1960-2018.

Results and discussions

Urban areas should provide job opportunities and increase the quality of life of the population (EU, 2016). The urban agenda for the EU considers that cities can offer innovative solutions that lead to the generation of new economic opportunities. The Amsterdam Pact aims to increase the quality of life of the population in the European Union. Urban mobility, employment and skills acquisition are other priority topics of the Urban Agenda. Thus, education is of particular importance. For cities, population from 15 to 64 years by educational attainment level is presented in the Table 1 (%).

Table no. 1 Comparative situation of educational attainment level for population from cities, 15 to 64 years, 2009-2018, (%)

Countries	Less than primary, primary and lower secondary education (levels 0-2)		Upper secondary and post-secondary non-tertiary education (levels 3 and 4)		Tertiary education (levels 5-8)	
	2009	2018	2009	2018	2009	2018
European Union	29,2	23,8	44,5	41,0	26,4	35,2
Austria	23,5	19,9	55,0	42,4	21,5	37,7
Belgium	33,5	29,4	35,8	32,5	30,6	38,1
Bulgaria	16,8	12,5	54,7	51,5	28,5	36,0
Croatia	15,8	10,2	62,6	54,3	21,6	35,5
Cyprus	26,9	18,1	37,8	36,1	35,3	45,8
Czechia	13,2	10,6	67,0	56,6	19,8	32,8
Denmark	25,9	19,7	39,1	36,0	35,0	44,2
Estonia	13,2	11,9	49,0	43,5	37,8	44,7
Finland	20,5	15,7	40,7	40,2	38,8	44,1
France	31,4	23,7	37,2	36,5	31,5	39,8
Germany	23,0	20,4	52,2	48,8	24,8	30,9
Greece	29,7	19,9	45,2	46,1	25,2	34,0
Hungary	15,9	11,5	56,9	53,0	27,2	35,5
Ireland	26,5	18,0	35,1	33,3	38,4	48,7
Italy	43,7	36,0	40,4	41,1	16,0	22,9
Latvia	15,5	11,1	56,1	52,3	28,3	36,7
Lithuania	12,8	7,8	51,1	43,0	36,1	49,2
Luxembourg	28,5	16,8	35,4	18,7	36,0	64,5
Malta	62,0	45,0	24,8	30,5	13,2	24,5
Netherlands	31,3	24,1	38,8	38,6	29,9	37,2

Poland	12,7	9,5	60,6	50,3	26,7	40,2
Portugal	62,3	43,1	20,0	28,5	17,7	28,5
Romania	15,3	12,0	64,0	57,7	20,7	30,3
Slovakia	11,6	8,9	65,3	53,3	23,1	37,8
Slovenia	14,8	12,8	56,2	48,3	29,0	38,9
Spain	42,2	34,7	25,2	25,9	32,7	39,4
Sweden	20,2	18,1	40,9	35,5	38,8	46,4

Source: own processing according to data published by Eurostat, 2020

In Table 1, for tertiary education (levels 5-8), we can see increases in values for all the member countries of the European Union. The highest increases were registered in: Luxembourg (+28,5%), Austria (+16,2%), Slovakia (+14,7%), Croatia (+13,9%), Poland (+13,5%), Lithuania (+13,1%), Czechia (+13,0%). At the same time, the lowest increases were registered in: Finland (+5,3%), Germany (+6,1%), Spain (+6,7%), Italy (+6,9%), Estonia (+6,9%), Netherlands (+7,3%). In 2018, the countries with the highest values of the population from cities with tertiary education are: Luxembourg (64,5%), Lithuania (49,2%), Ireland (48,7%), Sweden (46,4 %), Cyprus (45,8%), Estonia (44,7%). At the same time, the lowest values were registered in: Italy (22,9%), Malta (24,5%), Portugal (28,5%), Romania (30,3%), Germany (30,9%), Czechia (32,8%).

For towns and suburbs, population from 15 to 64 years by educational attainment level is shown in Table 2 (%). From the data presented, for less than primary, primary and lower secondary education (levels 0-2), it is observed that only in Luxembourg the values increased (+4,6%), in the rest of the member states of the European Union, compared to since 2009, in 2018 the values have decreased. Thus, compared to 2009 figures, the lowest decreases were registered in: Germany (-1,3%), Romania (-1,5%), Latvia (-1,7%), Estonia (-1,8%), Lithuania (-2,5%). Also, in 2018, compared to 2009, the most significant decreases in values were recorded in: Portugal (-23,1%), Croatia (-18,5%), Malta (-18,3%), Bulgaria (-8,8%), Spain (-7,6%), Cyprus (-7%). However, in 2018, the countries in which the population of towns and suburbs with less than primary, primary and lower secondary education were the most: Portugal (51,6%), Spain (46,3%), Italy (41,9%), Malta (41,1%), Luxembourg (31,3%), Netherlands (28,5%).

Table no. 2 Comparative situation of educational attainment level for population from towns and suburbs, 15 to 64 years, 2009-2018, (%)

	Less than primary, primary and lower secondary education (levels 0-2)		Upper secondary and post-secondary non-tertiary education (levels 3 and 4)		Tertiary education (levels 5-8)	
	2009	2018	2009	2018	2009	2018
Countries						
European Union	34,8	28,2	46,8	47,9	18,4	23,9
Austria	23,3	19,2	61,9	51,9	14,8	28,9
Belgium	30,8	25,4	40,9	39,7	28,3	34,9
Bulgaria	28,9	20,1	56,2	59,1	14,9	20,8
Croatia	36,0	17,5	57,4	63,1	6,6	19,4
Cyprus	32,1	25,1	41,2	40,1	26,7	34,8
Czechia	15,8	12,6	72,3	67,5	11,9	19,9
Denmark	33,6	27,5	40,6	42,5	25,8	30,0
Estonia	18,6	16,8	45,2	51,3	36,2	31,9
Finland	22,0	18,2	44,6	47,2	33,4	34,6
France	32,4	25,6	45,1	45,0	22,5	29,3
Germany	21,8	20,5	58,2	56,9	20,1	22,6
Greece	31,2	26,4	43,8	44,0	24,9	29,6
Hungary	23,1	20,0	60,3	59,9	16,7	20,1
Ireland	26,6 (2012)	21,0	36,7 (2012)	40,9	36,7 (2012)	38,1

Italy	48,8	41,9	40,3	43,3	10,9	14,7
Latvia	15,9	14,2	48,4	54,8	35,7	31,0
Lithuania	14,1 (2012)	11,6	59,8 (2012)	55,8	26,1 (2012)	32,6
Luxembourg	26,7	31,3	43,4	37,0	29,9	31,6
Malta	59,4	41,1	28,9	34,5	11,7	24,4
Netherlands	35,0	28,5	44,0	43,3	21,0	28,2
Poland	18,5	12,0	66,4	61,7	15,1	26,3
Portugal	74,7	51,6	15,7	28,0	9,7	20,4
Romania	25,7	24,2	64,6	63,8	9,8	12,0
Slovakia	15,6	12,2	70,9	65,1	13,5	22,6
Slovenia	20,3	16,2	60,5	54,5	19,2	29,3
Spain	53,9	46,3	22,2	24,8	24,0	28,9
Sweden	26,4	21,8	45,7	44,1	27,9	34,1

Source: own processing according to data published by Eurostat, 2020

From the data presented in Table 2, for upper secondary and post-secondary non-tertiary education (levels 3 and 4), it is observed that compared to 2009, in 2018 the values decreased for: Austria (-10%), Luxembourg (-6,4%), Slovenia (-6%), Slovakia (-5,8%), Czechia (-4,8%), Poland (-4,7%), Lithuania (-4%). Also, the values increased in: Portugal (+12,3%), Latvia (+6,4%), Estonia (+6,1%), Croatia (+5,7%), Malta (+5,6 %), Ireland (+4,2%), Italy (+3%). In 2018, the countries with the highest population values from towns and suburbs with upper secondary and post-secondary non-tertiary education are: Czechia (67,5%), Slovakia (65,1%), Romania (63,8%), Croatia (63,1%), Poland (61,7%), Hungary (59,9%). At the same time, the lowest values were registered in: Spain (24,8%), Portugal (28%), Malta (34,5%), Luxembourg (37%), Belgium (39,7%), Cyprus (40,1%). In Table 2, for tertiary education (levels 5-8), we can see increases in values for all the member countries of the European Union, except Estonia and Latvia, where the values decreased by -4,3% and -4,7 respectively. The highest increases were registered in: Austria (+14,1%), Croatia (+12,8%), Malta (+12,7%), Poland (+11,2%), Portugal (+10,7%), Slovenia (+10,1%), Slovakia (+9,1%). At the same time, the lowest increases were registered in: Finland (+1,2%), Ireland (+1,4%), Luxembourg (+1,7%), Romania (+2,2%), Germany (+2,5%). In 2018, the countries with the highest values of the population from towns and suburbs with tertiary education are: Ireland (38,1%), Belgium (34,9%), Cyprus (34,8%), Finland (34,6%), Sweden (34,1%), Lithuania (32,6%). At the same time, the lowest values were registered in: Romania (12%), Italy (14,7%), Croatia (19,4%), Czechia (19,9%), Hungary (20,1%), Portugal (20,4%).

Table no. 3 Evolution of the degree of urbanization, 1960-2018, (%)

Countries	1960	1968	1976	1984	1992	2000	2008	2018
European Union	61,20816	64,93035	67,7174	69,56794	70,72922	71,76965	73,56551	75,66565
Austria	64,72	65,159	65,351	64,57	62,417	60,213	57,966	58,297
Belgium	92,46	93,569	94,6	95,835	96,542	97,129	97,555	98,001
Bulgaria	37,1	49,768	58,526	64,099	67,056	68,899	71,622	75,008
Croatia	30,154	38,076	44,545	48,937	51,588	53,428	54,819	56,947
Cyprus	35,628	39,726	49,563	64,252	67,598	68,648	67,839	66,81
Czechia	59,548	63,456	71,018	75,394	75,03	73,988	73,394	73,792
Denmark	73,687	78,698	82,6	84,243	84,898	85,1	86,487	87,874
Estonia	57,533	63,577	68,106	70,558	70,86	69,368	68,351	68,88
Finland	55,29	62,106	68,634	75,015	80,128	82,183	83,299	85,382
France	61,88	70,238	72,997	73,575	74,401	75,871	77,868	80,444
Germany	71,384	72,147	72,617	72,943	73,36	74,965	76,575	77,312
Greece	55,936	62,543	67,429	70,327	71,757	72,716	75,568	79,058
Hungary	55,911	59,276	62,65	64,915	65,587	64,575	67,943	71,351
Ireland	45,184	48,956	53,975	56,115	57,293	59,155	61,141	63,17
Italy	59,361	63,309	65,844	66,846	66,742	67,222	68,092	70,438

Latvia	52,867	59,175	64,826	68,283	68,852	68,067	67,834	68,142
Lithuania	39,46	47,507	56,915	64,277	67,464	66,986	66,848	67,679
Luxembourg	69,556	73,425	77,867	80,613	81,528	84,216	87,8	90,981
Malta	90,129	89,682	89,751	89,82	90,611	92,368	93,929	94,612
Netherlands	59,752	61,3	63,498	66,319	70,223	76,795	85,402	91,49
Poland	47,892	51,326	55,929	59,573	61,359	61,716	61,116	60,058
Portugal	34,955	38,025	41,179	44,777	49,13	54,399	59,359	65,211
Romania	34,209	39,328	43,339	48,926	54,227	53,004	53,567	53,998
Slovakia	33,464	39,435	47,331	53,711	56,719	56,233	55,111	53,726
Slovenia	28,204	35,169	43,499	49,424	50,543	50,754	52,209	54,541
Spain	56,567	64,168	70,231	73,982	75,61	76,262	77,976	80,321
Sweden	72,49	79,519	82,802	83,1	83,361	84,026	84,746	87,431

Source: own processing according to data published by World Bank, 2020

Another important indicator of development is the degree of urbanization. It is considered that a high degree of urbanization makes human resources more efficiently used. Table 3 presents the evolution of the degree of urbanization, for the period 1960-2018 (%).

It is noted that in 1960, the countries with the highest levels of urbanization were: Belgium (92,46%), Malta (90,129%), Denmark (73,687%), Sweden (72,49%), Germany (71,384). Compared to 1960, in 2018, the countries with the highest degree of urbanization are: Bulgaria (+37,908%), Netherlands (+31,738%), Cyprus (+31,182%), Portugal (+30,256%), Finland (+30,092%). It is noted that in the period 1960-2018, in Bulgaria, the degree of urbanization has doubled (from 37,1% to 75,008%). The lowest increases are observed for: Malta (+4,483%), Belgium (+5,541%), Germany (+5,928%). At the same time, in Austria, the degree of urbanization decreased from 64,72% (in 1960) to 58,297% (in 2018).

Also, in 2018, the highest values were registered in: Belgium (98,001%), Malta (94,612%), Netherlands (91,49%), Luxembourg (90,981%), Denmark (87,874%), Sweden (87,431%), Finland (85,382%), France (80,444%), Spain (80,321%).

In 2018, the countries with the lowest levels of urbanization are: Slovakia (53,726%), Romania (53,998%), Slovenia (54,541%), Croatia (56,947%), Austria (58,297%).

In view of the information presented above, the following figure shows the evolution of the degree of urbanization for Austria and Bulgaria (%).

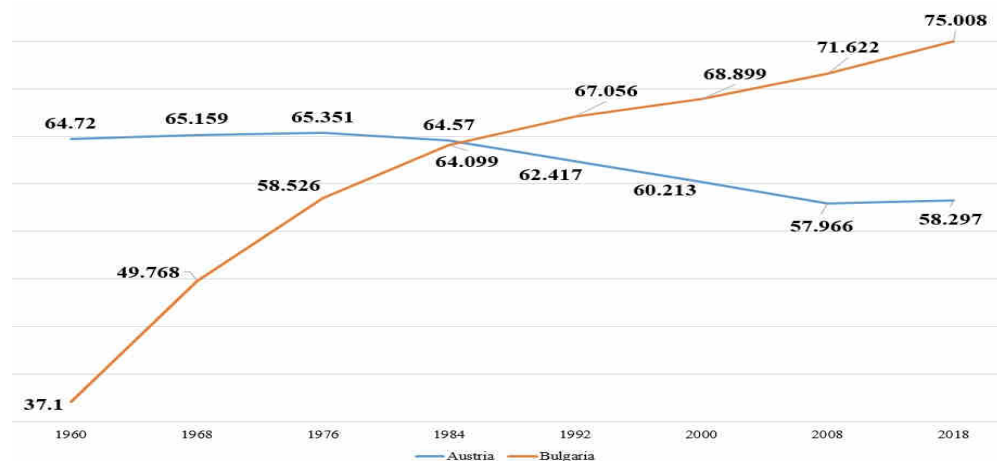


Fig. no. 1 Evolution of the degree of urbanization for Austria and Bulgaria (%)

Source: own processing according to data published by World Bank, 2020

Thus, for the period 1960-2018, the trend for Austria is decreasing, and for Bulgaria the trend of urbanization is increasing.

Conclusions

Both education and the workforce are changing as a result of the emergence and use of new manufacturing technologies. The labor force market in the urban area requires people with a high level of qualification. The complexity of the tasks that employees have to perform are becoming more complex.

From the analysis presented, it was found that in the member countries of the European Union, for both cities and towns and suburbs (with two exceptions), the percentage of the population from 15 to 64 years with tertiary education (levels 5-8) increased. Also, for both cities and towns and suburbs (with one exception), the percentage of the population from 15 to 64 years with less than primary, primary and lower secondary education (levels 0-2) decreased.

Regarding the degree of urbanization, the analysis shows that, if in 1960 ten countries registered values below 50%, in 2018, all the member countries of the European Union had an urbanization degree of at least 50%.

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ASPECTS OF WASTE MANAGEMENT IN THE EUROPEAN UNION

**Sorin Petrică Angheluță¹, Irina Elena Petrescu², Marcela Antoneta Niculescu³
and Elena Rusalca Velicu⁴**

^{1) 2) 4)} The Bucharest University of Economic Studies, Romania

³⁾ National Institute of Research and Development for Industrial Ecology, Romania

E-mail: sorin.angheluta@gmail.com; E-mail: irina.petrescu@eam.ase.ro;

E-mail: marcela_mitrita@yahoo.com; E-mail: rusalca.velicu@gmail.com

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Abstract

People, through their economic activities, influence the environment. In urban areas, the population is growing. This phenomenon, in addition to the increases in the industry, leads to increased quantities of waste. In this way, besides socio-economic problems, environmental problems also appeared. Technologies that do not use raw materials in high percentages have negative effects on natural resources. Their exhaustion is also a consequence of the reduced use of raw materials. The article presents an analysis of the waste treated in the member countries of the European Union. A method of reducing the impact of waste on the environment is given by the application of technologies that reduce the quantities of waste generated. Some wastes are hazardous to human health. Their harmful effect is also affecting the environment. The composition of solid urban waste is influenced by the technologies used to produce the products, as well as the energy sources used. For this reason, it is beneficial for the environment to apply waste management systems in order to reuse and recycle them. Considering the predominantly urban distribution of the population of the European Union, the article presents the situation of municipal waste both generated and treated. An important contribution to sustainable development has a more efficient waste management. The circular economy can be considered as a solution to prevent the increase of the quantities of waste.

Keywords

waste, municipal waste, circular economy, waste management, European Union.

JEL Classification

Q53, Q50

Introduction

Solid waste landfills are one of the sources of methane emissions. Thus, the larger these deposits are, the higher the methane emissions (Jeong et al., 2019). Rapid urban expansion has caused waste management to change. The existence of sewerage and sewerage systems

represents important facilities of urban areas (Saxena et al., 2019). It is desired, as through the production processes, to result in reduced quantities of unusable waste. An economy in which all resources would be recycled can be considered a perfect economy (Jianu et al., 2019). Some wastes contain in addition to very toxic substances and certain valuable raw materials (Rădulescu et al., 2018). Therefore, waste management also involves knowing the factors that affect their collection. Motivation for an unpolluted environment is a key element in improving waste recycling (Otto et al., 2018). The efficiency of collection is also influenced by the climatic conditions in which the landfills are located. These can alter greenhouse gas emissions (Lee et al., 2017).

Sustainable development implies the existence of a waste management strategy. The strategy of the waste management can be influenced by the management of the waste collection infrastructure. These deficiencies lead to high emissions, as well as unsustainable practices in terms of waste management (Fuldauer et al., 2019).

Literature review

The interest in the sustainability of waste management strategies has led to the tendency to identify alternative waste management strategies (Dima et al., 2020). Communities can intervene on the issue of waste, through collaboration between stakeholders from various industrial and business sectors (Ng et al., 2019).

Linear type consumption is not sustainable. It involves further interventions to correct environmental, financial and social impacts (Angheluta et al., 2019). The circular economy allows the use of efficient practices with low costs (Negescu Oancea, et al., 2019). This means that the waste is turned back into raw material, which corresponds to the replacement of natural raw materials (Russo et al., 2019).

Food waste, as well as increasing the frequency with which food is wasted, leads to an increase in the relative amount of food waste in households. Thus, one of the interesting topics for research is given by the food waste (Burlacu et al., 2018). It is found that some of the food becomes food waste, not being a source of food. However, a large area of agricultural land is used to produce the raw materials needed for these foods (Burlacu et al., 2019). In addition, energy and water are consumed for the processing of the raw material, preparation, packaging and storage of these foods (Bodislav et al., 2019). All of these processes involve greenhouse gas emissions (van Herpen et al., 2019). One of the measures used in developing countries is the composting of food waste. But in addition to food waste, food waste also contains other associated materials (Ioniță et al., 2009). The presence of heavy metals in these associated materials increases the toxicity. At the same time, given the high severity, the cost of treatments increases when heavy metals are found in waste (Chu et al., 2019). Even if large quantities of food waste result in the food production process, they can be re-evaluated (Litra and Burlacu, 2014). Identifying sustainable solutions for waste management, as well as reducing the amount of waste, is the basis of the circular economy strategies in any industrial sector (Garcia-Garcia et al., 2019).

Another example of waste that will need attention in the coming years is waste from photovoltaic panels. It is considered that the amount of this waste will increase greatly due to the life cycle of the panels. The efficiency with which the photovoltaic panels are recycled is low. However, it is necessary to recover high quality materials. Increased efficiency in recycling could be achieved through heat treatments, but these lead to atmospheric pollutant emissions. For this reason, the photovoltaic panels to be built should consider improving the efficiency of the resources (Ardente et al., 2019). Improper management of plastic waste leads to plastic contamination. The aquatic environment, but also the terrestrial environment, through human activities, are contaminated with microplastic material. Soil quality, through agricultural land, but also water quality, through rivers and seas, can be influenced by high concentrations of microplastic materials (Corradini et al., 2019). Radioactive waste is another

major point of interest. Many countries, which have developed nuclear industries, have chosen to manage long-term radioactive waste through their geological disposal process (Scheidegger et al., 2019).

Methodology of research

The article presents an analysis of the waste treated in the member countries of the European Union, for the period 2004-2016. Considering the predominantly urban distribution of the population of the European Union, the article presents the comparative situation of municipal waste both generated and treated, for 2009, respectively 2018. The analysis was performed for both the total quantities and the quantities per capita.

Results and discussions

The high quantities of waste that people produce has increased the importance that must be given to the treatment of these wastes. Thus, the Table 1 presents the comparative situation of the treated waste in the member countries of the European Union. The comparison was made for 2004 and 2016 respectively. Also, for 2016, the weight distribution for hazardous waste and non-hazardous waste treatment is shown. It is noted that at European level, the total waste treatment increased in 2016, compared to 2004, with +197.460.000 tonnes. Also, the values increased in: Finland (+58.440.001 tonnes), Netherlands (+54.053.386 tonnes), Sweden (+49.839.963 tonnes), Greece (+44.575.661 tonnes), Germany (+37.202.862 tonnes). The decrease in the amount of total waste treatment was registered in: Bulgaria (-78.206.588 tonnes), Romania (-34.815.816 tonnes), Spain (-29.504.762 tonnes), Portugal (-14.276.095 tonnes). However, in 2018, the countries where the total waste treatment quantities were high are: Germany (383.204.029 tonnes). France (304.814.284 tonnes), Romania (175.698.723 tons), Poland (163.002.317 tons).

Table no. 1 Comparative situation of waste treated, European Union

Countries	2004	2016		
	Total waste treatment (tonnes)	Total waste treatment (tonnes)	Share hazardous waste treatment (%)	Share non-hazardous waste treatment (%)
European Union (28 countries)	2.114.190.000	2.311.650.000	3,32	96,68
Belgium	32.985.766	43.506.358	5,63	94,37
Bulgaria	195.064.838	116.858.250	11,28	88,72
Czechia	22.521.031	22.913.480	2,31	97,69
Denmark	12.892.738	19.062.523	9,89	90,11
Germany	346.001.167	383.204.029	5,61	94,39
Estonia	15.410.921	19.872.869	48,26	51,74
Ireland	18.227.850	11.767.578	0,67	99,33
Greece	25.499.043	70.074.704	0,60	99,40
Spain	136.220.011	106.715.249	1,99	98,01
France	283.391.472	304.814.284	2,35	97,65
Croatia	4.756.565	3.684.489	2,06	97,94
Italy	102.352.518	136.041.718	2,68	97,32
Cyprus	1.182.660	1.953.732	7,24	92,76
Latvia	988.139	1.836.259	1,12	98,88
Lithuania	4.579.718	4.810.390	1,27	98,73
Luxembourg	10.217.449	11.321.117	0,41	99,59
Hungary	9.826.086	13.960.246	2,45	97,55
Malta	3.097.939	1.472.647	0,03	99,97
Netherlands	85.826.150	139.879.536	3,79	96,21
Austria	51.627.556	60.028.645	0,75	99,25

Countries	2004	2016		
	Total waste treatment (tonnes)	Total waste treatment (tonnes)	Share hazardous waste treatment (%)	Share non-hazardous waste treatment (%)
Poland	128.581.819	163.002.317	0,85	99,15
Portugal	23.945.324	9.669.229	5,08	94,92
Romania	210.514.539	175.698.723	0,20	99,80
Slovenia	4.990.764	4.810.258	1,60	98,40
Slovakia	12.104.130	7.923.648	2,16	97,84
Finland	67.015.648	125.455.649	1,60	98,40
Sweden	87.181.191	137.021.154	0,97	99,03

Source: own processing according to data published by Eurostat, 2020

In 2016, the countries with the highest share of hazardous waste treatment were: Estonia (48,26%), Bulgaria (11,28%), Denmark (9,89%), Cyprus (7,24%), Belgium (5,63%). The share of non-hazardous waste treatment had high values for: Malta (99,97%), Romania (99,80%), Luxembourg (99,59%), Greece (99,40%), Ireland (99,33%).

As in Finland, compared to 2004, the amount of total waste treatment increased significantly (+58.440.001 tonnes), the Figure 1 shows the evolution of this indicator (tonnes).

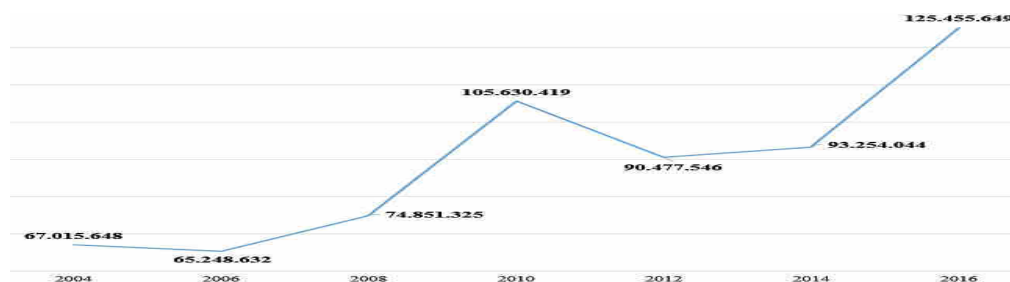


Fig. no. 1 Evolution of the total quantity of waste treatment, 2004-2016, Finland

Source: own processing according to data published by Eurostat, 2020

It is observed that the periods of decrease of values were: 2004-2006, 2010-2012. For the other periods the trend was increasing (2006-2010, 2012-2016).

Within the total quantity of waste generated and treated, municipal waste represents a separate segment. Thus, the Table 2 presents the comparative situation of municipal waste generated and treatment in the member countries of the European Union (thousand tonnes).

Table no. 2 Comparative situation of municipal waste generated and treatment

Countries	Municipal waste generated		Municipal waste treatment		Countries	Municipal waste generated		Municipal waste treatment	
	2009	2018	2009	2018		2009	2018	2009	2018
European Union (28 countries)	257,042	250,474	249,482	246,668	Latvia	753	785	753	676
Belgium	5,042	4,698	4,779	4,698	Lithuania	1,206	1,301	1,196	1,167
Bulgaria	4,449	2,973	4,309	2,922	Luxembourg	338	371	338	371
Czechia	3,310	3,732	2,894	3,732	Hungary	4,312	3,729	4,284	3,746
Denmark	4,206	4,436	4,206	4,436	Malta	268	310	268	285
Germany	48,466	51,013	48,466	51,013	Netherlands	9,738	8,806	9,738	8,806
Estonia	452	535	383	505	Austria	4,921	5,119	4,788	5,041
Ireland	2,953	2,768 (2017)	2,825	2,724 (2017)	Poland	12,053	12,485	10,054	12,485

Countries	Municipal waste generated		Municipal waste treatment		Countries	Municipal waste generated		Municipal waste treatment	
	2009	2018	2009	2018		2009	2018	2009	2018
Greece	5,154	5,415 (2017)	5,154	5,415 (2017)	Portugal	5,496	5,222	5,496	4,986
Spain	25,108	22,222	25,108	22,222	Romania	7,768	5,296	6,246	5,134
France	34,426	35,272	34,426	35,272	Slovenia	1,069	1,009	851	795
Croatia	1,743	1,768	1,732	1,619	Slovakia	1,654	2,254	1,583	2,253
Italy	32,107	30,165	29,840	27,488	Finland	2,562	3,041	2,562	3,041
Cyprus	589	547 (2017)	589	505 (2017)	Sweden	4,390	4,416	4,390	4,416

Source: own processing according to data published by Eurostat, 2020

Regarding municipal waste generated, it is noted that, in 2018, the highest quantities were generated by Germany (51,013 thousand tonnes), France (35,272 thousand tonnes), Italy (30,165 thousand tonnes), Spain (22,222 thousand tonnes). Also, the lowest quantities generated were recorded in: Malta (310 thousand tonnes), Luxembourg (371 thousand tonnes), Estonia (535 thousand tonnes), Latvia (785 thousand tonnes), Slovenia (1,009 thousand tonnes).

In 2018, the countries where the amount of municipal waste treatment was high are: Germany (51,013 thousand tonnes), France (35,272 thousand tonnes), Italy (27,488 thousand tonnes), Spain (22,222 thousand tonnes).

For 2018, there is a negative difference between municipal waste generated and municipal waste treatment in: Italy (-2,677 thousand tonnes), Portugal (-236 thousand tonnes), Slovenia (-214 thousand tonnes), Romania (-162 thousand tonnes), Croatia (-149 thousand tons), Lithuania (-134 thousand tons), Latvia (-109 thousand tons). Also, of the countries with the highest values of waste generated in 2018, there were significant decreases compared to 2009: Spain (-2,886 thousand tonnes), Italy (-1,942 thousand tonnes). For the same period, Germany had an increase of + 2,547 thousand tonnes. Based on this information, the Figure 2 shows the evolution of the quantities of municipal waste generated for Germany and Spain, for the period 2009-2018 (thousand tonnes).

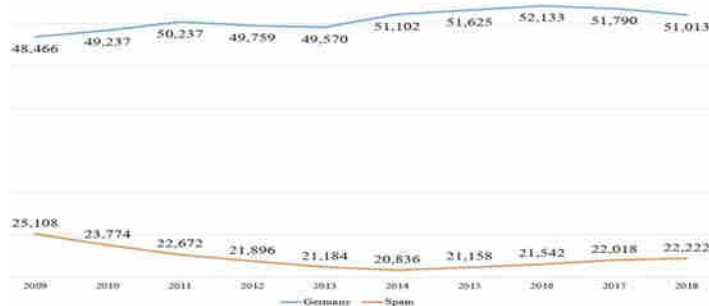


Fig. no. 2 Evolution of the quantities of municipal waste generated, Germany and Spain, 2009-2018 (thousand tonnes)

Source: own processing according to data published by Eurostat, 2020

It can be seen that the quantity of municipal waste generated for Germany had a relatively increasing trend for the period 2009-2016, and for the period 2016-2018 the trend was decreasing. For Spain, the quantity of municipal waste generated decreased in 2009-2014, and in 2014-2018 the trend was increasing.

The amount of municipal waste generated and treatment depends on a number of factors. As the number of urban population is one of the main factors, the Table 3 presents the

comparative situation of municipal waste generated and treatment, in the member countries of the European Union (kilograms per capita).

Table no. 3 Comparative situation of municipal waste generated and treatment, 2009-2018 (kilograms per capita)

Countries	Municipal waste generated		Municipal waste treatment		Countries	Municipal waste generated		Municipal waste treatment	
	2009	2018	2009	2018		2009	2018	2009	2018
European Union (28 countries)	511	488	496	481	Latvia	352	407	352	351
Belgium	467	411	443	411	Lithuania	381	464	378	417
Bulgaria	598	423	579	416	Luxembourg	679	610	679	610
Czechia	317	351	277	351	Hungary	430	381	427	383
Denmark	762	766	762	766	Malta	649	640	649	587
Germany	592	615	592	615	Netherlands	589	511	589	511
Estonia	339	405	287	382	Austria	590	579	574	570
Ireland	651	576 (2017)	623	567 (2017)	Poland	316	329	264	329
Greece	464	504 (2017)	464	504 (2017)	Portugal	520	508	520	485
Spain	542	475	542	475	Romania	381	272	307	264
France	534	527	534	527	Slovenia	524	486	417	383
Croatia	405	432	402	396	Slovakia	307	414	294	414
Italy	543	499	505	455	Finland	480	551	480	551
Cyprus	729	637 (2017)	729	587 (2017)	Sweden	472	434	472	434

Source: own processing according to data published by Eurostat, 2020

It is noted that in 2018, municipal waste generated in kilograms per capita had the highest values in Denmark (766 kilograms per capita), Malta (640 kilograms per capita), Germany (615 kilograms per capita), Luxembourg (610 kilograms per capita), Austria (579 kilograms per capita). The countries with the lowest municipal waste generated in kilograms per capita were: Romania (272 kilograms per capita), Poland (329 kilograms per capita), Czechia (351 kilograms per capita), Hungary (381 kilograms per capita), Estonia (405 kilograms per capita).

In terms of waste treatment in kilograms per capita, in 2018, the countries with the highest values were: Denmark (766 kilograms per capita), Germany (615 kilograms per capita), Luxembourg (610 kilograms per capita), Malta (587 kilograms per capita), Austria (570 kilograms per capita). Low values were recorded in: Romania (264 kilograms per capita), Poland (329 kilograms per capita), Czechia (351 kilograms per capita), Latvia (351 kilograms per capita), Estonia (405 kilograms per capita).

Conclusions

The technologies by which the products are manufactured influence globally global warming and environmental pollution. Municipal waste consists mostly of waste generated by households, but also includes waste generated by small institutions and businesses.

From the analysis presented, it was found that in the member countries of the European Union the total waste treatment increased from 2.114.190.000 tonnes (in 2004) to 2.311.650.000 tonnes (in 2016). Regarding municipal waste generated, it is noted that, in 2018, the highest quantities were generated by the countries with the largest population (Germany, France, Italy, Spain). The highest quantities of municipal waste treatment were recorded in these countries. Municipal waste generated in kilograms per capita were higher in: Denmark, Malta,

Germany, Luxembourg, Austria. Also in these countries were the highest values for municipal waste treatment in kilograms per capita.

Climate change and human activities can destabilize the critical processes of the planetary system. Preventing the increase of the quantities of waste can also be achieved through the circular economy. The increase of industrial activities, due to the increasing demands, leads to an increased consumption of resources. These aspects negatively affect the planetary resources, but also the quality of human life. A circular economy is based on sustainable flows of materials and energy. Thus, waste can be included in reuse programs to create additional value. The efforts of producers and consumers can lead to the activation of a circular economy (Velenturf and Jopson, 2019).

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GLOBALIZATION OF FINANCIAL SYSTEMS IN EMERGING COUNTRIES

Mihaela Diana Negescu Oancea¹, Ovidiu Cristian Andrei Buzoianu², Valentin Lazăr³ and Cristina Dima⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: mnegescu@yahoo.com; E-mail: buzoianuvidiu@yahoo.com;

E-mail: valentin.lazar@ase.ro; E-mail: dima.cristina5@gmail.com

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Abstract

The term globalization is a diversity of meanings, which is a constitution or a source of confusion. When it comes to globalization, economies and business people are thinking especially of the international growth of markets, that is a tendency towards greater pronouncement of economic integration and financing. In recent years, in the general impression regarding the global financing, the international financing does not yet have an insufficient level of integration, and the capital markets segment persists. During this time, this phenomenon is difficult to reverse and this is due to the recent regulations for a financing system, technological progressives for financing and communication services, as well as the diversity of channels for the diffusion of a financial globalization.

Keywords

globalization, financial system, trade, emerging.

JEL Classification

F01, G15

Introduction

According to the definition needed in economic environments, globalization mainly refers to international integration. This point can be seen, an interdependence necessary in the operation of the management of internationalization processes, and is not a definition.

The increasing degree of integration of international financial markets can be implemented with regard to the way of conducting and orientating international financial flows (Jianu et al., 2019). Globalization of financing is an irreversible process of care to produce structural and functional changes throughout the global economy (Profiroiu et al., 2019).

This paper begins by analyzing some perspectives on the process of globalization and then presents an overview of the international monetary system. Having a well-defined structure and a distinct area of manifestation, international financial relations are in fact an extension of the economic relations that have emerged between the different. The most important

aspects considered in the study of the way of manifestation and development of international financial-monetary flows, and which the present paper intends to analyze in detail are: international financial institutions with universal vocation, the evolution of the international monetary system, the monetary arrangements existing international instruments, the main instruments used in international financial markets, financial intermediation and its role in the development of international financial flows (Dropol, 2001).

Micro and macroeconomic effects of globalization

In small companies, the manager, synonymous with the owner, makes all the decisions related to the international activity of the organization (Ndikumana, 2003).

As the geographical spread increases, the relevance of its decisions is reduced, the distance can diminish until its competence is canceled and, consequently, decentralization is required (Bran et al., 2018). This need increases as the small, multinationalized companies enter a network, characterized by a shared operating space (Bodislav et al., 2019). Each manager thus appears as an element of a whole, his decisions being subordinated to the coherence and profit of the whole ensemble, which relativizes the importance of his role (Bran, 2005).

Small, global firms are highly decentralized, with a strong specialization, a complex and formalized internal and external information system (Patriche, 2003). The flexibility and the high reaction speed of the small companies to the change of the external operating environment favors "their economic performance, raising a series of challenges to the actors that have fed the change, in this case the multinational companies, imposing them an appropriate adaptation" (Rotariu, 2001). In addition, the exacerbation of competition, induced by the globalization of the world economy, generates constraints of multinational companies, accelerating the pace of innovation.

The relations between the multinational companies and the nation states have evolved with the transformation of the world economy system, the strategies of the multinational companies and the policies of the states interacting with each other (Demirguc-Kunt, 2001).

The international establishments of the companies are determined by the characteristics of the national economic and social systems, and the industrial policies of the states are conditioned by the global strategies of the multinational companies. The globalization of the financial market is another clear indication that the economies of different countries are moving towards an increasingly integrated global system (Burlacu et al., 2019).

The post-war monetary arrangements from Bretton Woods, the establishment of the International Monetary Fund and the World Bank have constituted a more stable and integrated international financial system, based on the basic idea that unstable capital movements impede the development of international trade and can lead to wide crises (Fătu, 1998).

This central idea has lost its operability, but not of importance, as the developed countries resorted to the liberalization of capital, against the background of market liberalization in the 1980s, of the economic growth of the last decades, of the technological progress, which, at in turn, they stimulated financial innovations leading to the emergence of derivatives.

Increased competition in international financial markets forces large financial institutions to launch large-scale operations around the world, challenging national borders and time zones, and including in their offerings a growing variety of financial services (Olteanu, 2003).

A first consequence of the process of globalization is to improve the macroeconomic efficiency of financial systems (Burlacu and Jiroveanu, 2011). The free movement of capital, interconnected markets and risk coverage opportunities provided by the new financial instruments allow for an optimal balance between the total financing capacity and the loan applications of corporations or governments (Popescu I., 2004) The level of the market interest rate, established on the basis of the ratio between demand and supply and

incorporating the specific risk, leads to a more efficient allocation of capital. (Păunescu, 2004).

Finally, the expansion of financial markets allowed the rapid channeling and transformation of savings into investments. By reducing financing through bank loans, which led to a certain curtailment of the creation of the currency of account, the financial markets allowed the financing of the economy in a less inflationary way.

Research Methodology and Results

Evolution of international foreign financial flows

The economic integration favored by the mobility of the capital and by the substitutability of the assets contributed to the diversification of the currency-financial relations (Rădulescu et al., 2018). The resources in foreign currency that are mobilized and distributed in order to carry out international economic exchanges, investments and cover other requirements have registered significant increases. The economic development of the countries, the deepening of the international division of labor amplified the financial and credit flows (Voinea, 2007). The evolution of international economic exchanges and cooperation, industrial and investment policies, the opening of national commercial spaces and the liberalization of capital movements have generated a tendency of globalization in the field of international currency-financial relations (*Chart 1*).

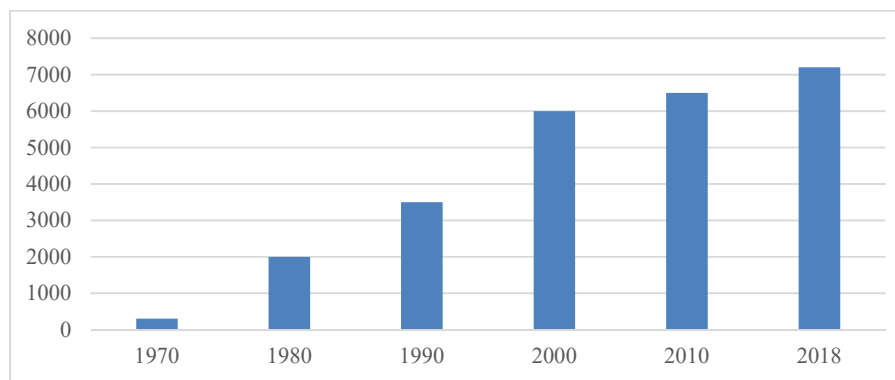


Fig. no. 1 Evolution of international economic relations

Source: www.unctad.org, *Development and globalization – facts and figures, Annual Report, 2019*

The main evolutions of the structure of financial flows in the current period are the following:

- Foreign direct investments (the acquisition and management of productive assets abroad) have passed the phase of their concentration at the level of the main industrialized states and have now acquired an increasing global dimension.

After an uninterrupted growth in the activity of foreign direct investments in 2003-2007, global FDI inflows decreased by 14% in 2008 to \$ 1,697 billion, following a continuous but not very significant increase in the following period. International bank loans know two main forms, namely: traditional loans and euro currency loans.

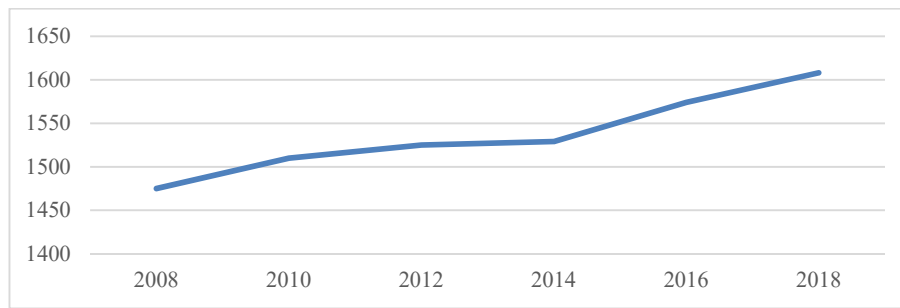


Fig. no. 2 International bank loans (billion dollars)

Source: European Central Bank, Annual Report 2019

- International bond issues are a component of a continuous growth process due to the fact that it is a fast and cheap way to attract foreign capital. The financial disintermediation process contributes to reducing operating costs and adapting the transactions to the specific needs of the borrowers. The main issuers of these financial assets are multinational governments and corporations, and the main holders are institutional investors, especially pension funds. At the level of the European continent, the main countries holding international bonds are Sweden, France, Germany and the United Kingdom;

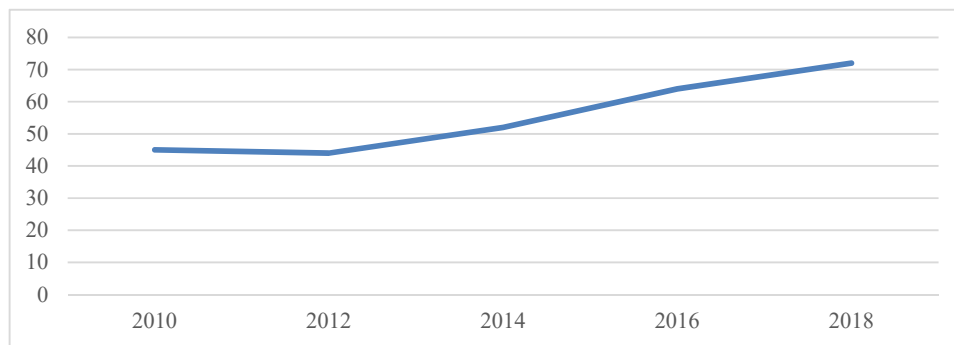


Fig. no. 3 Futures contracts and commodity options (billion dollars)

Source: www.unctad.org, Trade and Development Report, 2019

- Issues of international shares have led to a significant transformation of national stock markets. Most of the capitalization of the London stock exchange consists of foreign shares listed on the London market. The value of international equities has increased sharply in recent decades. With the disappearance of national controls on the movement of capital and the reduction of restrictions on foreign institutional investors, there is a phenomenon of diversifying their portfolios internationally and increasing the share of foreign portfolio investments in shares issued by companies located in developing countries;

- The international market of financial instruments derived from the type of futures and options contracts has undergone a spectacular development. These instruments are based on the main currencies, interest rate assets, stock indices and a number of main commodities.

Perspectives of emerging economy capital markets

Venture capital investments are investments in small and medium-sized companies, which provide, on the one hand, above-average income and, on the other, an above-average investment risk. Developing countries have limited experience with industrialized countries in terms of venture capital. All the more so since in Eastern Europe and Asia there are over 250 venture capital funds, the total number increasing to 400 worldwide.

The short history of investing in venture capital in developing countries and the lack of documentation on private financing agreements is due to the few published studies, and those that exist are at a basic level.

Forecasts regarding the position of the capital markets in the future:

- Capital markets are not developed in economies in transition
- Due to the changes in the shareholding structure - from the state sector to the private sector - many observers believe that functional capital markets are essential in the transition process. Indeed, 20 of the 26 economies in transition have formed capital markets in the last 10 years. And yet, many of them are poorly developed or inactive. Even the most developed markets in Central Europe are small - the market capitalization does not exceed USD 15 billion in Rep. Czech, Hungary or Poland.

Among the members of the British Community of Independent Nations (CIS), with the exception of Russia, the market capitalization is less than USD 1 billion. As a ratio in GDP, capitalization equals levels in other emerging markets only in Estonia and Hungary. The activity on the capital markets is reduced in the economies in transition, with values of the volume of transactions / Market Capitalization ratio less than 30%.

- ***Developing an internal capital market will be very difficult for most of the economies in transition***

Due to legal and institutional reforms and private sector development, markets in Central Europe and the Baltic area will continue to grow. And yet, with the exception of Poland, none of these markets will exceed the \$ 20 billion level of capitalization in the near future. In CIS member countries and in many Eastern European countries, weak laws and regulations, slow development of the private sector, modest participation of institutional investors, the uncertainty of macroeconomic development has posed serious obstacles to the development of capital markets. Although many of these constraints can be overcome, capital markets in all transition economies will remain small by international standards, and many will not reach a minimum level of economies of scale.

Even if macroeconomic and legal system progress is being made, the power of institutional investors increases, by 2012 the market capitalization of all transition economies is expected to be around USD 15 billion - only 4% of the current market capitalization worldwide.

Slow development of domestic capital markets does not mean that economies in transition will not have access to the services and functions offered by international capital markets.

Globalization of international financial services transactions, harmonization of rules regarding the acquisition and transaction of capital worldwide, technological development has increasingly allowed corporations to list their shares and raise capital in the markets that offered the most convenient method of financing. financing, lowest price, and highest liquidity.

Similarly, the globalization of the trading systems and newer, the Internet system allows the customers from anywhere in the world to have access to the services of the capital markets. Thus, corporations will easily raise capital from foreign markets, while domestic institutions and small investors will have access to much of the coveted mix - in terms of risk and profit - of financial instruments, reducing the need for local capital markets.

As local markets become virtual electronic platforms, most economies in transition will choose to import capital markets services.

- ***Developing a basic infrastructure is essential***

Although the economies in transition can import the services of the capital markets, they still need to improve the infrastructure of the financial system, which includes better legal protection of creditors and shareholders, the publication of information related to the activity of the company's better quality and quantity, a higher quality of institutional investor management, support of public and private institutions.

The strength of the legal system and the quality of information determines the development of the financial sector - there is a direct relationship between the development of the financial sector and the economic development. Rather than trying to develop a costly capital market, rather, these countries should focus on institutional development as a whole, and in particular legal reforms. And these will facilitate access to global markets.

Although well-developed according to the standards of the economies in transition, the capital markets of Central Europe and the Baltic area are unlikely to remain independent. Due to the process of European integration, local capital markets will merge with European trading markets. Most of these countries have harmonized their financial legislation with that of the EU.

To the extent that there will be problems in their application, they will be overcome as corporations will increasingly use external jurisdictions to define ownership. These countries have completed their privatization and post-privatization process with changes in shareholder structure and need capital markets to raise new funds and strengthen corporate governance, but both can be achieved through global markets.

Conclusions

Globalization is such a complex phenomenon that it cannot be decided as clapping if it is more beneficial than evil. The advantages are all the more difficult to weigh as the phenomenon engages the most diverse areas of contemporary reality.

In essence, it is considered that the process of globalization and globalization remains a dynamic and powerful force for economic development and growth, in the sense that it can improve the overall performance of the economies of developing countries by increasing the export markets, by promoting the transfer of information and technology, by increasing the resources available for investments. At the same time, globalization offers the opportunity to expand the world market, the commodity trade between states being stimulated by the creation of different free trade areas or economic communities and offers the possibility of producing and marketing a diversified, increasingly complex and more varied range of goods, from a national to a global dimension, in accordance with the demands of technological progress and consumer requirements.

Against this background, there is a major trend of modern society, that of gradual reduction, until the disappearance, of all the categories of barriers that impede the exchanges and the movement of goods on a world scale, respectively.

In the current context, understanding of how the international financial system works, the basic components of this system (money - currency markets and capital markets, financial intermediation institutions), the instruments used by the operators in this system, but especially the financial system. the behavior that underlies the allocation of financial resources are essential conditions for sustainable economic development.

To ensure a dynamic financial balance at international level, economic globalization must be governed, in its effects, by redefining the links between the monetary-financial system and the world economy. The result of the dynamics of the globalization phenomenon can only be a new world economic order, in which, however, they must be "reinvented" or "adjusted", from a functional point of view, the role and position of each category of national economy in the international economic and financial system.

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DEMOGRAPHIC CHARACTERISTICS OF EMPLOYEES AS WORK ENGAGEMENT PREDICTORS: CASE STUDY OF SERBIA

Ana Nešić¹, Slavica Mitrović Veljković², Maja Meško³ and Tine Bertnocel⁴

¹⁾²⁾ Faculty of Technical Sciences, University of Novi Sad, Serbia

³⁾ Faculty of Management, University of Primorska, Koper, Slovenia

⁴⁾ Faculty of Organisation Studies, Novo mesto, Slovenia

E-mail: ana.nesic@uns.ac.rs; E-mail: mslavica@uns.ac.rs

E-mail: maja.mesko@gmail.com; E-mail: tine.bertoncel@fos-nm.si

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Abstract

The paper analyzes the correlation between employee engagement, observed through the dimensions of energy, commitment and absorption, with the general demographic characteristics of employees. The sample was suitable and consisted of 826 employees in 16 different organizations in the Republic of Serbia. The results indicate that respondents' general geographical characteristics are only partial predictors of work engagement. The results obtained have an applicative value, because on the basis of them it is possible to conceptualize managerial and organizational measures for establishing desirable measures that would contribute to work engagement.

Keywords

Work engagement, Organization, Employees, Demographic characteristics.

JEL Classification

J00, L00

Introduction

Work engagement is a segment of organizational behavior that can identify a number of significant indicators of successful work behavior such as motivation, commitment, responsibility, interest and others. Different researches have suggested a positive link between employee engagement and organizational performance, such as: employee retention, productivity, profitability, consumer loyalty, and security. The main motive for this research is the position and role of employees in organizations in Serbia, where employees usually do not represent the intrinsic value of the organization, and their human and relational capital is

not used in a way that would contribute to the quality of the organization's business and the quality of life of employees.

Contemporary business planning for the future takes into account the age differences between employees, their characteristics and preferences. Past research has shown that differences between Generation X (born in the period 1965-1980) and Generation Y (born in the period 1981-1994) have been identified with regard to technology, collaboration, work ethic issues and socialization. In the context of technology, Generation X follows trends, such as music at work, high-speed computers, new types of phones, and motivates Generation Y, which look up to Generation X. In the context of collaboration, Generation X limits personal meetings and offers alternatives such as conference calls, videos, e-mails, and web conferences, while Generation Y favors social networks in encouraging team collaboration and knowledge sharing.

In the context of work ethics, Generation X offers the flexibility to work and work from home, and Generation Y accepts new rules such as productivity rather than hours worked on the job. In the context of socialization, Generation X is not exactly pushed to participate in social activities, while the career goals of Generation Y seem to be focused on maximizing social networking (Luthans, 2011). Certainly, differences in work engagement exist and are significant too, especially in cultures that are changing so slowly and whose development is still in its infancy. The contribution of the research can be seen through the improvement of human resources management by establishing desirable internal communication rules and procedures that would allow employees to have clearer behavioral patterns and facilitate integration into the European business value flows.

Review of the scientific literature

Kahn (1990) defines work engagement as the ability to use the personal enthusiasm of employees in their work roles, as simultaneous employment and a kind of projection of a person's preferred style of behavior in work, as well as personal presence (physical, cognitive and emotional) and activity in the performance of a given work roles. By combining cognitive, emotional and conative influences on employees, it is possible to contribute to work engagement. Cognitive interventions help employees understand what they need to know to do their jobs as efficiently as possible. Emotional interventions help employees connect their thoughts and emotions. When people understand the cause of their behavior, they may struggle to let go of negative emotions such as anger, anxiety and apathy. Conventional interventions help employees transition from thinking to action. Rhoades and Eisenberger (2002) point out that employees form their opinions about an organization's relationship to them through policies, strategies, and procedures.

Employee work engagement can also be defined as a measure of emotional and intellectual commitment of employees to their organization and success (Hewitt Associates, 2009). By this definition, employees with higher levels of engagement will contribute more to a high-performance organization. Schaufeli and his colleagues (Schaufeli et al., 2002) defined it as a positive fulfillment of a working state of mind characterized by strength, commitment and absorption. Numerous studies have shown a positive correlation between employee engagement and greater work performance (Bertoncelj, 2010; Dinu, 2016; Cirkvenčič et al., 2017; Shkoler and Tziner, 2020). Several elements of organizational communication influence the improvement of employee engagement. Therkelsen and Fiebich (2004) found that managerial role was the key to engaging employees in the organization.

Higher levels of work engagement are also associated with higher levels of employee satisfaction, their loyalty, higher productivity, lower fluctuation, less absenteeism, presentism (presence with fear of losing their job), fewer accidents at work, and better quality of work performed. Work engagement is positively related to job characteristics such as resources, motivators or incentives, as the form of social support of co-workers and superiors,

performance feedback, mentoring, job autonomy, task diversity and training goals (Salanova et al., 2001; 2003; Schaufeli et al., 2003).

Schaufeli and Baker (2010) have proposed a model that considers work engagement as a psychological condition that mediates between the impact of work and personal characteristics on organizational outcomes. Using four independent samples, two of them also showed that work engagement mediated the relationship between job resources and intentions to become involved (Schaufeli and Bakker, 2004). In addition, various longitudinal studies have shown that high levels of work engagement over time lead to greater organizational commitment (Hakanen et al., 2008; Boyd et al., 2011), more personal initiative and more innovative behavior at the team level (Hakanen et al. 2008), less reported sick leave (Schaufeli et al., 2009), and a better played role at work (Bakker and Bal, 2010).

Possible consequences of work engagement relate to positive attitudes toward work and toward the organization and positive organizational behavior such as personal initiative and motivation to learn (Sonnentag, 2003) and proactive behavior (Salanova et al., 2003). Finally, work engagement again seems to be positively correlated with work performance. For example, a study involving about a hundred Spanish hotels and restaurants found that the level of employee engagement positively affected the service climate in those hotels and restaurants, which in turn predicted both off-staff behavior and customer satisfaction (Salanova et al., 2003).

Research methodology

Research problem

The main problem of the research is to understand the connection and correlation of work engagement with the general demographic characteristics of the respondents.

Research hypotheses

Two general hypotheses have been defined based on the research questions and objectives of the research:

H1 - There is a correlation between work engagement and general demographic characteristics of employees in the surveyed organizations.

H2 - There is a difference in the observed variables with respect to the general demographic characteristics of respondents from different organizations.

Objectives of the research

The goals of the research are to define:

- relations between work engagement and general demographic characteristics of employees;
- difference between respondents with respect to general demographic characteristics;
- and review the possible practical implications of the results obtained.

Research instrument

The survey questionnaire consists of questions related to the general geographical status of the respondents and the UWES questionnaire for measuring employment engagement.

The Employment Measurement Questionnaire is “The Utrecht Work Engagement Questionnaire” (UWES) by Schaufeli and Bakker (Schaufeli and Bakker, 2003), which consists of 17 statements in the form of a seven-point Likert-type attitude scale. Work engagement is measured across three dimensions: Energy, Commitment and Absorption. The reliability of the scale observed unidimensional is high (Cronbach's alpha is .948).

Sample of respondents

The sample consisted of 826 respondents (52% male, 48% female), from 16 organizations belonging to manufacturing and service companies observed by type of business activity, and by legal form organizations were public and private ownership. Four enterprises are production-private, four belong to the IT sector of private property services, four are private and in services, and four belong to state-owned public enterprises “(table no. 1)”.

Table no. 1 Structure of the respondents' sample

		Frequency	Percentage %
Age group	25 and less	83	10.0%
	26-35	379	45.9%
	36-45	217	26.3%
	46-60	126	15.3%
	60 and more	21	2.5%
Educational background	Primary school	4	0.5%
	High School	223	27.0%
	Higher education	107	13.0%
	A university degree	492	59.6%
Length of service in the current company	5 years and less	449	54.4%
	6-10	189	22.9%
	11-20	120	14.5%
	21-30	40	4.8%
	31 and more	28	3.4%
Type of business activities	Manufacturing	327	39.6%
	Service	499	60.4%
Legal form of the organization	Public ownership	250	30.3%
	Private ownership	576	69.7%

The survey was conducted by a questionnaire, in a personal contact with respondents with the permission of direct executives in organizations, during breaks or at the end of working hours.

Research results

Descriptive analysis of the results revealed the values of the dimensions of Work Engagement used in research “(table no. 2)”. The degree of demonstration of the measured variables shown in Table 2 displays that the average values of the examined variables differ. The highest expression was displayed through the work engagement dimension Absorption ($M = 5.19$).

Table no. 2 Descriptive indicators for the variables used (N=826)

	M	SD	Me	Min	Max	Normality measures			
						Z _{Sk}	Z _K	K-S ^a	p
Work engagement	4.91	1.16	5.00	1.38	7	-.48	-5.71	.06	.00
Energy	4.47	1.45	4.67	1	7	-3.72	-2.08	.07	.00
Absorption	5.19	1.04	5.33	1	7	-6.69	2.95	.06	.00
Commitment	4.97	1.42	5.00	1	7	-8.25	0.19	.10	.00

Legend:

a. Lilliefors correction of significance

Me- the median, Sk- skunes, K- kurtosis, K-S – Kolmogorov Smirnov statistik

Differences regarding the general demographic characteristics of the respondents

When it comes to educational background, the results show that more educated people have a statistically higher rating of Work Engagement, Energy, Absorption, Commitment. Persons with more seniority have statistically lower scores on all variables (Work engagement, Energy, Absorption, Commitment) “(table no. 3)”.

Table no. 3 Correlation between examined and general demographic variables determined by the Spearman correlation (N=826)

		Age group	Educational background	Years of service
Work engagement	r	.005	.185**	-.117**
	p	.895	.000	.001
Energy	r	.024	.139**	-.079*
	p	.491	.000	.023
Absorption	r	-.005	.184**	-.133**
	p	.894	.000	.000
Commitment	r	-.008	.158**	-.108**
	p	.813	.000	.002

Legend

**. The correlation is significant at the 0.01 (2-way level).

*. The correlation is significant at the 0.05 (2-way) level.

Gender differences were examined using the t-test for independent samples and it was found that there were no statistically significant differences. Descriptive indicators in the form of differences in arithmetic means showed that men gave more answers on all the variables examined except for Absorption. The significance of this variable for female gender can be attributed to gender roles and differences in the nature of two genders “(table no. 4)”.

Table no. 4 Review of results of gender differences analysis using t-test for independent samples ($N_M=430$, $N_F=396$)

	Leven test		t-test for independent samples				M	SD
	F	P	t	df	P			
Work engagement	.39	.53	.22	824	.83	Male	4.92	1.14
						Female	4.90	1.17
Energy	1.86	.17	1.08	824	.28	Male	4.52	1.41
						Female	4.41	1.50
Absorption	.02	.88	-.76	824	.45	Male	5.16	1.06
						Female	5.22	1.03
Commitment	.43	.51	.40	824	.69	Male	4.99	1.38
						Female	4.95	1.45

Conclusions

The general demographic characteristics of the respondents proved to be to some extent important for explaining the work engagement concept because the results indicated that more educated persons statistically rated Work Engagement (and the dimensions Energy, Absorption and Commitment) more than those with lower education. The result in itself is interesting because it opens up some other problems that were not the subject of this research. Indicators that employees with a higher level of education are more likely to have higher scores on almost all variables can indicate that employees with a college degree have jobs that require more work engagement.

Persons with more years of service and seniority have statistically lower scores on all variables (Work Engagement, Energy, Absorption and Commitment). With these results, the second hypothesis is partially confirmed. This result is also very important for further analysis, it is especially interesting whether declaring the significance of the measured variables is also related to the work results, or whether it is related to older employees in Serbia who are not considered a significant resource in organizations. Younger employees responds are somewhat expected, because they are early in their careers and need more engagement, are more motivated and interested in the results.

There are at least four reasons why engaged workers do better than non-engaged workers. Engaged employees often experience positive emotions, including happiness, joy and enthusiasm; better health; they create their own business and personal resources and transfer their engagement to others (Schaufeli and Van Rhenen, 2006; Roblek et al., 2020), and this may be why they are more productive. Happy people are more sensitive to job opportunities, more helpful to others, more confident and optimistic (Cropanzano and Wright, 2001). On the other hand, when it comes to non-engaged workers, the causes for non-engagement could be different: the inability of employees to influence decision-making, unavailability of management, lack of commitment to the company, interpersonal relationships, evaluation by management, etc.

Differences between age and other general demographic characteristics are important for the conception of working teams, specific work tasks and policies of the organization that would contribute to the best possible work outcomes of individuals and groups of employees.

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DETERMINANTS OF PERSISTENT POVERTY IN THE EU COUNTRIES

Simona-Roxana Ulman¹ and Cristina Căuțișanu²

¹⁾ “Alexandru Ioan Cuza” University of Iasi,
Doctoral School of Economics and Business Administration, Romania

²⁾ “Alexandru Ioan Cuza” University of Iasi,
CERNESIM Environmental Research Centre, Romania
E-mail: simona.ulman@uaic.ro; E-mail: cristina.cautisanu@uaic.ro

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Abstract

Although the significant progress is met across different components of society, poverty still remains an issue in the political and academic debates. Moreover, persistent poverty represents a thorough reality of the societies, being caused by complex interactions between economic, social and environmental factors. In this context, our paper intends to analyze the relationships between persistent poverty, on one hand, and the national patterns in terms of resources productivity and domestic material consumption, of agricultural size of holdings, of tertiary educational attainment and, also, of social protection, on the other hand, across the European Union member states in 2018. Our results showed that persistent poverty is significantly influenced by all the above indicators, excepting educational attainment. In detail, an increasing number of small farms in terms of worked land (2 ha) determines a higher level of persistent poverty. Contrary, resources productivity and domestic material consumption and, also, expenditure of social protection represent determining factors that influence persistent poverty in a negative manner. In other words, their increasing represents ways of poverty amelioration. Focusing on the analysis of a critical phenomenon, affecting a significant part of European population, we consider that our study responds to a real need for research in this field.

Keywords

persistent poverty, resource productivity and domestic material consumption, agricultural size of holdings, education, social protection, econometric modelling, European Union.

JEL Classification

C50, I32, I38, J21, O13

Introduction

Poverty is a real concern in the context of the necessity to comply with the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda (UN, 2015), where this problem is

especially pointed out. The subject is largely debated within the academic literature because of its amplitudes from all over the world, emphasizing a thorough reality of the societies that urgently needs for specific solutions. It represents a complex social construction, with multiple facets, being defined in terms of lack of economic income, but also in terms of deprivation of material necessities, of basic rights etc. (Alkire and Santos, 2013; Whelan *et al.*, 2014; Samuel *et al.*, 2018). As Nunan (2015) mentions, poverty is caused by the complex interactions between economic, social and environmental factors and this kind of approach must be taken into consideration in order to correctly understand them and, in this way, to know the directions needed to be improved for addressing it.

Literature review

Including the time perspective, poverty may be transient or persistent (Jalan and Ravallion, 1998; Hulme, 2003) and, in this context, attenuation strategies often focus on the concept of poverty trap (Barrett and Swallow, 2006; Barret and Carter, 2013). Its theoretical roots belong to the economic development theory, where it is defined as the persistent poverty delimited by a specified income threshold (Cao *et al.*, 2009; Glauben *et al.* 2012). The major characteristics of a poverty trap are the ones related to (1) its persistence (the period of remaining in poverty), (2) its determinant factors (both personal characteristics and external particularities), (3) the generating mechanism, as the integrative perspective of the most important determinant factors of remaining in poverty, (4) possible strategies for overcoming this problem through formulating solutions from the perspective of the mechanism of generating it.

We can consider the poverty traps as resulting from unsustainable and unappropriated personal and external particularities that reinforce each other (see Dasgupta and Ray, 1986; Kremer, 1993; Dercon, 2009), concretizing in what is called persistent poverty. Completing this perspective, the poverty traps are frequently analyzed within the studies devoted to sustainable development (Gunderson and Holling, 2002; Allison and Hobbs, 2004; Cumming, 2018), where they are considered as the consequence of the complex interactions between the economic, environmental and social dimensions.

In the context of the persistent poverty, it is necessary to call to the concepts of resilience and adaptation regarding these dimensions (Gunderson și Holling, 2002) and, in this way, creating new feedbacks and strengthening the positive ones (Haider *et al.*, 2018). More, other papers emphasize new modalities of conceptualizing the dynamic of poverty traps in terms of natural resources and their management (Boonstra *et al.*, 2016; Enqvist *et al.*, 2016). In this way, these studies put into attention the fact that the pattern of natural resources consumption is closely linked to the persistent poverty.

Persistent poverty and the determining factors taken into consideration

The persistent poverty was measured using the *Persistent-at-risk-of-poverty rate*. This indicator is defined as the share of persons with an equivalised disposable income below the risk-of-poverty threshold in the current year and in at least two of the preceding three years. The threshold is set at 60% of the national median equivalised disposable income (Eurostat, 2018).

Having in mind the above findings mentioned from the academic literature, we chose to integrate in our discussion regarding the main determinants of persistent poverty one indicator offered by Eurostat (2018), i.e. *Resource productivity and domestic material consumption*. The indicator is part of the EU Sustainable Development Goals (SDG) indicator set, being used to evaluate the progress towards SDG 12 regarding *ensuring sustainable consumption and production patterns* and SDG 8 regarding *decent work and economic growth* (UN, 2015). In other words, it is related to the manner in which the resources are utilized – if they are efficiently used or not, and, it is, in this way, closely

linked to the creation of well-paid quality jobs and to the achievement of global prosperity through the recognized importance of the high levels of economic productivity (Eurostat, 2018).

Moving on, the SDG 2 on *ending hunger, achieving food security and improved nutrition and promoting sustainable agriculture* (UN, 2015) is other goal of sustainable development that is related to SDG 1 on *ending poverty in all its form everywhere* (UN, 2015), that represents the focus of our paper. In this way, aspects related to agriculture needs to be included within a discussion regarding poverty and, especially, the persistent one. As it was observed within the literature, a large part of poor people depends on agriculture for their livelihood (Agarwal, 1986; Irz *et al.*, 2001; Christiaensen and Demery, 2007) and it was argued that the poor stood to gain much more from GDP growth originating in agriculture than from an equal amount of GDP growth generated outside the sector (Ravallion and Chen, 2003; Kraay, 2006; Christiaensen *et al.*, 2011). In this context, we selected one indicator related to agriculture, i.e. *Agricultural size of holdings with less than 2 ha (farms)* (Eurostat, 2018), in order to observe the extent of the very small farms within each country taken into analysis. The number of holdings that work less than 2 ha of land represents a very relevant indicator for the level of agricultural development in a national context and the comparison between countries regarding it is useful for understanding the state of fact in terms of agricultural productivity.

Nearby these two indicators belonging to the environmental and economic dimensions of sustainability, we selected one of the most important and representative indicator for the social dimension, i.e. education, measured through *Tertiary educational attainment (% of population)* (Eurostat, 2018). In this way, we intended to observe if the individual educational background is especially linked to the persistent poverty and, even more, if it contributes to determining the level of this phenomenon. As shown within the literature, in general, when poverty is analyzed, the education is mentioned as one of its most important determinants (Galbraith, 1998; Sen, 1999; Alkire and Santos, 2013; Samuel *et al.*, 2018).

As a third force in addition to, on one hand, the individual components (represented, in our study, by education), and, on the other hand, the external context of private initiatives and actions (regarding national resource productivity, domestic material consumption and agricultural size of farms), able to help or not in the process of personal development, the social protection, as an instrument of the state, is integrated into our discussion. Its principle aim is to support workers and their households from contingencies threatening basic living standards, being grouped under three main headings: (1) social insurance; (2) social assistance and (3) labour market regulation (Barrientos, 2010). Being directed linked to the problems regarding the detaining of basic living standards, we expect that the level of expenditure on social protection to be significant in relation to the persistent poverty, as was also observed within other papers analyzing poverty issue (Soares, 2013; Schneider *et al.*, 2016). For observing this relation, we opted to include into our study the following indicator: *Level of total expenditure of general government devoted to social protection* (Eurostat, 2018).

Research goals

In this context, our paper intends to analyze the way in which some economic, social and environmental factors influence the persistent poverty, trying, in this way, to define the poverty trap in terms of their generating mechanism that integrates these determinants. For this, our specific objectives are: (1) to analyze the relationships between persistent poverty, on one hand, and the national patterns in terms of resources productivity and domestic material consumption, of agricultural size of holdings, of tertiary educational attainment and, also, of social protection, on the other hand, across the European Union member states in 2018; (2) to emphasize some solutions from the point of view of the considered potential

determinant factors, based on the results obtained on the endeavor of responding to the first objective.

Considering these objectives, the paper is structured as follows. Section 2 is dedicated to the methodology and the data used in order to achieve the established objectives. Section 3 illustrates the main empirical results. Section 4 represents the part dedicated to discussing and concluding remarks.

Data and methodology

We focused our empirical analysis and discussions on the persistent poverty across European Union countries, using data from 2018. In the study, there were included 26 of the EU countries, Ireland and Spain being excluded because of their extreme values regarding some of the considered variables. Table 1 presents the variables taken into consideration in the paper, along with the represented indicators and the related data sources.

Table no. 1 Variables used in the analysis

Variable	Indicator	Source
PAROP	Persistent-at-risk-poverty rate (%)	Eurostat
DMC	Resource productivity and domestic material consumption (Index 2000 = 100)	Eurostat
EXP_SOC	Level of total expenditure of general government devoted to social protection (% of GDP)	Eurostat
EDUCATION	Tertiary educational attainment (% of population)	Eurostat
HOLDINGS	Logarithm of Agricultural size of holdings with less than 2 ha (farms)	Eurostat

The empirical analysis was structured in 2 steps. The first one consisted in determining the nature of the relationships between PAROP and the other variables. In order to observe these, we used Principal Components Analysis (PCA) which is one of the most powerful techniques for dimension reduction that transforms a group of correlated variables in a smaller group of uncorrelated hypothetical constructs called principal components (Timm, 2002). In this way, the original data are projected into a new coordinate system where the first axis corresponds to the direction along which the data vary the most; the second axis corresponds to the direction along which the data vary the most after the first direction etc. (Kherif and Latypova, 2020). Based on the results of PCA, we developed a regression analysis in order to examine whether any of the explanatory variables (DMC, EXP_SOC, EDUCATION and HOLDINGS) has a significant effect on the explained variable (PAROP). The equation of the regression model is the following:

$$PAROP = \beta_0 + \beta_1 DMC + \beta_2 EXP\_SOC + \beta_3 EDUCATION + \beta_4 HOLDINGS + \varepsilon \quad (1)$$

where β_0 , β_1 , β_2 , β_3 and β_4 are the regression coefficients and ε is the residual component of the model (Greene, 2002).

Results

The variables considered in the analysis have homogenous distributions, the coefficients of variation regarding the persistent poverty and its determinant factors being lower than 50% across the European Union member states. The mean value of *persistent-at-risk-of-poverty rate* is 10.58%, values for this variable ranging between 5% (in Denmark and Finland) and 20% (in Romania). Regarding the *resource productivity and domestic material consumption*, the index varies between 79 (in Romania) and 182 (in United Kingdom) with a mean value of 132.27. The percentages of *social protection expenditure* at the level of EU states vary between 14.6% (in Romania) and 34.1% (in France), the mean value being equal

to 23.2%. The percentage of *tertiary educational attainment* is ranging between 25% (in Romania) and 58% (in Cyprus), with a mean value of 45.3%. Finally, the mean value of *agricultural holdings with less than 2 ha of land* is 4.25, values for this variable ranging between 2.26 (in Luxembourg) and 6.39 (in Romania). Referring to Romania, as a conclusion from this general perspective of the EU member states, we must mention that it is the country with the most critical situation in the case of all the five indicators included in our discussion. This observation may reveal, at the first sight, a deep link between the investigated national figures, sustaining our next steps that may direct our attention to the potential solution for persistent poverty amelioration.

In order to identify the correlations between these variables, we performed the PCA. The resulted solution regarding the projection of the variables on the coordinate system consisting of 2 axis is validated by the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (Kaiser, 1974) and Bartlett's Test of Sphericity (Bartlett, 1954). The KMO statistic (0.647) shows that there are significant correlations between the analysed variables, while the χ^2 statistic of the Bartlett's Test of Sphericity (30.171) indicates that the variables are dependent on each other, the correlation matrix being different from the unit matrix. Also, according to the Benzécri criterion (1992), the amount of variance explained by the 2 axis represents at least 70% of the total variance from the coordinate system (48.3% for the first axis and 22.4% for the second axis). Figure 1 illustrates the correlations resulted from the PCA alongside with the distribution of the EU member states in the coordinate system.

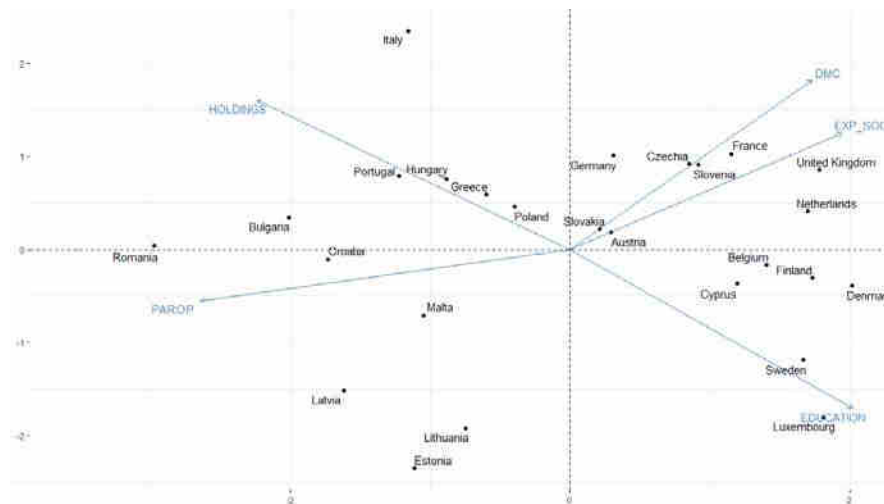


Fig. no. 1 Representation of the variables and EU countries in the first 2 axis of the coordinate system

We can observe that there are positive correlations between PAROP and HOLDINGS, on one hand, and between DMC, EXP_SOC and EDUCATION, on the other hand. Also, there are negative correlations between the two groups of variables. Concerning the EU member states, we can notice that countries such as Romania, Bulgaria and Croatia have high levels of persistent poverty and of agricultural holdings with less than 2 ha, unlike other countries, such as United Kingdom, Netherlands and Denmark, which are characterized by low levels for these variables, but high levels of domestic material consumption, social protection expenditures and education.

In order to analyze if the persistent poverty is significantly influenced by the determinant factors considered in the paper, we conducted a multiple linear regression. In Table 2, the results of the estimated model are included.

The significance of the unstandardized coefficients emphasizes the fact that the persistent poverty at the EU countries' levels in 2018 is significantly influenced by the resource productivity and domestic material consumption, social protection expenditures and size of agricultural holdings. The signs of these coefficients indicate that (1) DMC and EXP_SOC have a negative influence on the PAROP, meaning that an increase with one unit of the DMC or EXP_SOC determines a decrease in the mean level of PAROP and (2) HOLDINGS have positive influence on the PAROP, an increase of one unit in HOLDINGS generating an increase with 1.589% in the mean level of PAROP.

Table no. 2 Regression results

Regressor	Unstandardized Coefficients		Standardized Coefficients
	Coefficient	Std. error	Beta
DMC	-0.058 **	0.026	-0.357
EXP SOC	-0.201 *	0.109	-0.294
HOLDINGS	1.589 **	0.776	0.376
EDUCATION	-0.025	0.086	-0.053
Constant	17.248 **	7.095	-

Notes: The dependent variable is PAROP. ** and * denote statistical significance at the 5% and 10% level, respectively.

Regarding the standardized coefficients from the estimated model, we can observe that the size of agricultural holdings has the highest importance in the persistent poverty variation, followed by the domestic material consumption and social protection expenditures. Although the variable EDUCATION is significantly correlated with PAROP, in the regression model it doesn't have a significant influence and, also, it has the lowest importance in the variance of the dependent variable.

The commune variation of the resource productivity and domestic material consumption, social protection expenditures and agricultural holdings with less than 2 ha explains 53.8% of the persistent poverty variation in 2018 at the level of EU countries. The assumptions regarding regression residuals are validated according to the results of the statistical tests for the hypothesis of homoscedasticity, lack of autocorrelation of residuals and normality.

Conclusions and discussions

In this study, we offered a flash image of the European Union member states regarding the persistent poverty and its factors belonging to economic, environment and social dimensions of sustainability. In this way, we tried to understand the mechanism that generates it across the EU countries, as an integrative perspective of some of the most important determinants for escaping from the trap of persistent poverty. Based on this, we intend to point some potential solutions for breaking this vicious circle of this type of poverty.

We observed the fact that, although all the variables taken into discussion are linked to persistent poverty, when integrating them into an equation, only resource productivity and domestic material consumption, agricultural size of holdings and expenditures for social protection remain significant in terms of their influence on poverty. In detail, we found that improvement is needed in the way of utilizing the resources, regarding both production and consumption, at the national level and that this advancement is able to translate into the progress in terms of persistent poverty reduction.

Also, trying to reduce the number of small farms through policies that encourage cooperation and association between rural people working the land may represent other direction of diminishing the level of persistent poverty. We consider that this would be an additional step onwards to obtain a better productivity and would lead to the forming of homogeneous groups with similar interests, capable to act more efficiently in the market.

In terms of social protection expenditures, observing their important role in the case of amelioration of persistent poverty, we consider that these positive results have to be streamlined through a more oriented direction of aid to the poorest from the poorest individuals, that are the ones that need it the most, and not to the ones that are nearby the poverty threshold, as the general political practice is.

Taking into consideration the fact that Romania is on the end of the list across the European Union countries, registering the most critical levels, although in this paper, our focus was not on its situation, future research will be directed on studying it deeper.

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CONVENIENCE STORES TARGETING ALPHA GENERATION CHILDREN AS THEIR IMPORTANT INFLUENCE IN SHOPPING DECISION

Andreea Strătilă (Irimia)¹

¹⁾ The Bucharest University of Economic Studies, Romania

E-mail: irimia_andreea_elena@yahoo.com

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Abstract

Purpose - The purpose of this paper is to see how children belonging to Alpha Generation (born after 2010) can be targeted by convenience stores by emphasizing previous research findings on children as retail shopping decision actors

Design/methodology/approach – The literature review is presenting the premises that make the children a target for retailers, the ways which through children influence shopping decisions and the tools that retailers have used so far in order to target children. The paper also presents the characteristics of Alpha generation, the Romanian modern Grocery retail context and what makes it favorable to target this generation with its challenges – parents increasing busy, diet quality and technology addicted. Finally, are presented the conclusions and recommendations.

Findings – Corroborating the literature review with the actual convenience orientation shopping behavior and taking in consideration Alpha generation characteristics, the paper finds five variables through which convenience stores could target children: Technology, Assortment, Store atmosphere, Corporate Social Responsibility and Communication

Research limitations/implications – The paper is conceptual, so future research will be necessary to empirically validate these findings.

Originality/value - This study is an important instrument for further research and for retail managers. It offers a valuable response that convenience stores should have to Alpha generations expectations and their parent's challenges with social responsibilities implications regarding healthy diet, educative store environment and spending more quality time with family.

Keywords

Targeting children, Alpha generation, convenience stores, technology, healthy diet

JEL Classification

L81, M31

Introduction

Children are familiar with retail outlets (especially supermarkets) and the reality of shopping from an increasingly early age. (Thyne et. al., 2019). Parents are increasingly busy, which is why shopping could be a way to spend more time with children. Changing the lifestyle, increasing the population density, the number of persons in a household, in close connection with the increase of the number of professionally active women responsible for the management of the household, determined the growth and development of the convenience store format (Seiders, Berry and Grewal, 2002; De Kaervenoael, Hallsworth and Clarke, 2006). The healthy eating of children has become an essential preoccupation of the parents, which is the reason they choose to allocate considerable budgets even more as children are younger. Based on these two aspects, modern grocery retailers are actively engaging the young market, targeting them through various strategies. For example, in response to the demands of the Z Generation, retail has become a dynamic industry, using smart technologies that have allowed it to improve the shopping experience and remain competitive (Priporas, Stylos and Fotiadis, 2017).

According on these described above the most retail chains are focusing on the expansion of the convenience store format store. The question is asked is what effects in the marketing strategy of Romanian convenience stores will determine the Alpha Generation? Which are the variables that should make the Alpha generation (together with parents) comes in convenience store rather to shop online as they can influence shopping decision?

Literature review

Different consumers have varying desires and interests: witness the extensive array of products on supermarket shelves. This variety stems from diverse buying practices and basic variations of customers' needs and the benefits they seek from products. It is almost impossible to satisfy all customers in a market with a single product or service. Companies have responded by offering a proliferation of products and brands. Increasingly, therefore, companies have found it essential to move away from mass marketing towards a target marketing strategy where the focus is on a group of customers. This identification of target customer groups is market segmentation, where customers are aggregated into groups with similar requirements and buying characteristics (Dibb and Simkin, 1991, pp. 4).

The profile of contemporary customer is different from" customers of the past". Retail chains need always to adapt to active customers' requests. The young consumer became a fundamental issue for researchers to explain what this segment represents for retailers (Bilinska -Reformat and Stefanska, 2016).

Children as potential customers are a phenomenon, which appeared following the Second World War with the so – called baby boomer era. Over two decades, children became a primary market and a distinct segment in which growing industries created campaigns with targeted promotions, above all in the toy and confectionary sectors (Aramendia - Muneta, 2019).

In parallel, literature has examined children's influence on family consumer decisions since 1970s and 1980s (Bertol, Broilo and Espartel, 2017) and has established that children can influence family decision – making across a variety of goods and services (Marshall, 2014; Deli- Gray, et al. 2016). More than that, the influence of a child on family purchase decision increases as the child grows and becomes a consumer with specific skills, knowledge and attitude (Anitha and Mohan, 2016).

How it can be possible for children to influence the parents' shopping decision?

The literature emphasizes two main ways through children influence their parents shopping decisions: using pester power and nag factor (Bridges and Briesch, 2006; Marshall, 2014; Anita and Mohan, 2016; Kumar and Sharma, 2017; Page, et al., 2019). Both terms can be

defined as children's influence on family consumption patterns with the mention that the nag factor can also have a negative connotation being related with children request for unhealthy food as cereals or snacks (Bridges and Briesch, 2006). The literature also has mentioned two strategies used by children: rational (persuasive pestering) including negotiation, persuasion, expressing opinions (Marshall, 2014) which starts in the analytical age (7-11 years) and continues to take more importance in the adolescent stage (Anitha and Mohan, 2016) and emotional (emotional pestering) including expressing anger, sweet talk, being nice and affectionate which is seen in children from a very early stage.

Which are the tools that retailers have relied on so far in targeting children?

There are two main reasons for which parents are going with children at shopping: 1. There is nobody at home to watch them; 2. Parents are feeling guilty for spending too little time with children. Starting from here children are very familiar with shopping from very early stage. It's like a special place where they can be closer to their parents, having an important opinion, playing and meeting with all they have seen at home in commercials or know about it from friends, influencers or social media. Children's use of information in their attempts to influence family decisions is perceived positively by parents when this behavior helps them with their parental duties (Bertol, Broilo and Espartel, 2017). Retailers all over the world are looking for sustainable competitive advantage and focusing strategically on customer experience for children could be a possibility (De – Juan -Vigaray and Hota, 2019). Children are encouraged to perceive shopping not only for meeting utilitarian need (food, clothing, etc.) but also hedonic (play experiences) (Ironico, 2012). Collectible giveaways “free” to customers based on a minimum spend, are one type of play experience adopted by supermarkets (Thyne, et al., 2019). Exploring children's response to store atmosphere, Ayady and Cao (2016) have found that store atmospherics may lead to positive outcomes in the form of children's exploration of the store, desire to stay longer and intention to revisit. Retailers are making the store more appealing for children using color, music, architecture, scent, lighting and the latest interactive technology in order to enjoy themselves and so parents could spend more time and more money. They are also wanting eye-level accessible displays in stores favored by their parents or friends and a child friendly personnel. (De-Juan – Vigaray and Hota, 2018). According to the literature, younger children (from the ages of five to seven) prefer convenience stores and supermarkets for their ease of access, trustworthiness and the limited product range they offer (De-Juan – Vigaray and Hota, 2019). In 2017 Kumar and Sharma in their study “Pester Power and Advertisements Influence on Purchase of Food Products in a Convenience Store” found that ‘Freebies accompanied by the product’, ‘Cartoon characters on the packaging of the product’, ‘Color of the product’, ‘Taste of the product’, ‘Packaging of the product’ are the most important attributes of the product that influence the kids to demand a product as per the parents and also that specific food products in which pester power is most significant seem comparatively high in the chocolates, cakes and chips categories of products. Lately, various institutions in the NGO area that protect children are sounding alarms regarding the need to healthy feed children. In this so, UNICEF in its report SWOC – 2019 (*CHILDREN, FOOD AND NUTRITION; Growing well in a changing world*) brought into attention the influence of food marketing on children's diets. According to the WHO Commission on Ending Childhood Obesity (the ECHO Commission), food marketing is directly linked to growing overweight and obesity and related harms to children's health and nutrition: “There is unequivocal evidence that the marketing of unhealthy foods and sugar- sweetened beverages is related to childhood obesity.” (World Health Assembly, 2016). For example, a survey of Australian children aged 10–16 showed that those who engaged with more food content online, especially video ads, were more likely to consume unhealthy food (Baldwin, Freeman and Kelly, 2018). Several other systematic reviews have determined the extent, nature and impact of food marketing on children and subsequent reviews have reaffirmed these findings (Cairns, Angus and Caraher, 2013; Boyland and Tatlow , 2017).

Alpha Generation description

The “Alpha” generation belongs to the group born after 2010 and are characterized using technology, research facilitation and critical vision (dos Reis, 2018). They can be the children of “x” or “z” generation) and could make the connection of their parents with the new era, digital era (Tootell, Freeman and Freeman, 2014).

The Alpha generation will influence their parents shopping decision by seeking experiences and focusing on shopping convenience. If before children used nag factor and pester power, now access to the technology and screens, make these children better knowledgeable of their own needs which determines autonomy in the purchase decision.

Beyond the strengths of this generation remains the concern of parents for its natural diet. What are the foods that children have access to and how can obesity be avoided?

Actual context of Romanian modern grocery retailing for targeting Alpha generation

In Romania, after the entry of international modern retail chains in 1995, it can be said that children have started to be consulted in making decisions, were recognizing their individual needs by identifying in stores new products that have intended exclusively for them. Thus, parents, (generation x) raised in communism have included products exclusively for children on the shopping list. Shopping has become a way of spending time with the child, from the stroller to the whole ambiance of the store. The boom period from 1998 to 2000 was one that created confusion among children. The shopping from the abundance, the waste and the irrational consumption have created a totally inappropriate behavior as an example for the generations that formed. After 2008 Economic Crisis, consumption has started to rationalize. The offer being varied, the customers have become more demanding and the retailers have been forced to launch loyalty campaigns. The agglomeration of large cities, the reduction of leisure time, have led retail customers in two directions, aligning to developed country trends - convenience and experience. So, the new generations either choose the big stores that explore various experiences they discover online or choose the convenience store, for quick snacks, at school or at home. In order to reduce the time allocated to shopping, parents choose to make their purchases quickly in the proximity of the home, of the office, of the school, of the kindergarten or of the after school and consequently most modern retailers are focusing now on convenience stores expansion. In Romania, the population under 14 years represents 14.6% (INSSE, 2020). The promotional planning of retailers in Romania includes at least six major events for children: Easter, June 1, Beach (Summer), Back to School, Halloween and Christmas. Judging by what share have these events in retailer’s turnover, we could appreciate that children are important contributors to the retail business. In Grocery retail, we are referring to sweets and soft drinks categories mainly, which unfortunately have a big impact on children obesity.

According to COSI (European Childhood Obesity Surveillance Initiative) report (National Institute of Public Health, 2017), prevalence of obesity for Romanian children between 7 and 9 years differs from girls to boys: the % obesity varies for girls between 6 and 11 % while for boys is higher and varies between 13 to 15%. The COSI report also found that girls consume statistically significantly higher fruits and vegetables except potatoes. If we refer to the unhealthy behaviors, the boys consume statistically significantly more frequent salty snacks (popcorn, chips, peanuts, etc.) and foods like pizza, hamburger, fries, sausages. Children in rural areas consume significantly more vegetables, except potatoes, 100% fruit juice, sugary soft drinks ($p < 0.001$), flavored milk, dietary soft drinks, whole milk, cheese, other dairy products, meat, fish, salty snacks (chips, hazelnuts, popcorn, etc.), sweet snacks (candy, chocolate) ($p < 0.001$), sweets (biscuits, cake, cakes, etc.) and foods such as pizza, hamburgers, sausages, fries. Children in urban areas consume significantly more fruits.

Conclusion and recommendations

Targeting children by retailers have been researched a lot so far. But according to literature, contrary to a high research interest in the children's market today, little is known about the factors influencing children's experience in modern retail formats such as hypermarket (De – Juan – Vigaray, 2019) and this can be said also about convenience stores.

In order to avoid future Generation Z and Alpha shopping mainly online as the trends for tech-savvy are forecasting (De – Juan – Vigaray, 2019), retailers should implement specific store format actions for determining children to come in their store and also becoming their favorite store which based on past positive experiences when they are adolescents and adults they will come back (Barnes, Mattson and Sorensen, 2016).

According to currently findings, retailers are oriented to the omnichannel format - customers search, compare and order from home and then pick up the order from the store (Grewal, Roggeveen and Nordfalt, 2017), trying to respond as best as possible to the demands of customers who are oriented to convenience. and towards social presence (emotions and experiences) (Grewal et al., 2020).

Based on literature review and actual retailing trends, the paper emphasizes the next variables as recommendation in order to be taken in consideration by convenience store retail format in targeting Alpha generation: Technology, Assortment, Store atmosphere, Corporate Social Responsibility, Communication.

In store technology through games and the presence of tablets in aisle would allow children to have a true in store experience by engaging stimuli and strengthen their role in the shopping experience (De – Juan – Vigaray, 2019). The orientation towards convenience, the creation of experiences for the client and the degree of social presence (Grewal, et al., 2020) leaves behind the automatic technology (the technology of yesterday, oriented to productivity, which belongs to the traditional) and brings first cognitive technology (thinking technology) plan based on customer satisfaction and increasing the role of frontline employees as well as sensing technology capable of personalizing emotions and enhancing interaction with frontline employees (Rafaelli et al., 2017). Retailers should invest in-store atmosphere, make it fun and creative in order to attract children to play in store (Ayadi and Cao, 2016). Being in a more entertaining and playful environment children will wish to come back and loyalty will increase (De – Juan – Vigaray, 2019; Ayadi and Cao, 2016). Globally, children are exposed to a huge volume of marketing for unhealthy foods and beverages, despite the implementation of self-regulatory initiatives by industry (Unicef, 2019). Parents are becoming more aware about these thanks to different NGO campaigns and are focusing on their children healthy feed. Small retail food stores tend to concentrate near schools or homes, proving children (students) access to unhealthy snacks. Starting from the hypothesis that a ready – to – eat fruit snack would cost more than chips in convenience stores and that the lower price influence children choice, Deweese and Ohry – Vachaspati (2017) research find the opposite – prices do not differ significantly between chips and fruit in the overall sample in which both items were available. There was also found that stores sales mean volume for fruits and chips was not differing. According to these findings, convenience stores should promote ready-to-eat fruits for children as a price – neutral alternative to calorically dense snacks as a viable strategy to improve the nutritional quality of snacks. As an ethical and society responsible behavior it is expected from retailers to have an active role in reducing the gap in diet quality. Changing choice architecture by placing healthful foods and beverages in salient locations and at eye level are recommendations for increasing healthy food items sales (Moran et al., 2019). Creating dedicated educative space in store through which children playing can get information about the product, its provenance, the manufactures, the nutritional aspects, etc could satisfy children by playing, parents by gaining safe and healthy activities for their children and also the retailer in gaining credit for being socially responsible (Ayadi and Cao, 2016). Involving in sporting or any kind of educational activity could build lasting

relationships with children (De – Juan–Vigaray, 2019). Regarding the communication strategies more valuable are considered to be online, such as content marketing associated with a brand and specific online content targeted toward parents and young children, through which children will share with their friends and their parents (Bertol, Broilo and Espartel, 2017).

Because children and young people have been shown to have an increasing buying power of influence in the retail sector for more than 50 per cent of the household's expenses (De – Juan – Vigaray, 2019), both retail managers and academic experts should revise their thoughts about very young children (Deli- Gray, et al., 2016). Placed near homes and schools, children prefer convenience stores, so retailers should adapt their strategy according Alpha generation expectations and parents' challenges as spending more time with their children and finding healthy products options.

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DIGITAL DEVELOPMENT DYNAMICS IN RUSSIA IN 2015 – 2018

Sergey Petrov¹, Mikhail Maslov² and Alexey Karpovich³

^{1) 2) 3)} *Novosibirsk State Technical University, Faculty of Business, Russia*

E-mail: petrov.s.p@mail.ru; E-mail: feraj@mail.ru; E-mail: karpovich383@gmail.com

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Abstract

The digitalization process augments and widens our reality, giving people, organizations and countries new capabilities and better ways of different goods production and meeting their needs. The article considers current situation of digitalization in Russia basing on many indicators of digital economy development. These indicators are divided into six groups: digital skills of people, availability of digital goods for people, quality of working life and social sphere in conditions of digitalization, state electronic services and security of people informational activities. For these groups the analysis of digitalization process in all Russian regions was made for the years 2015 – 2018 and most notable specific features of indicators dynamics in different regions and for the whole country were described, as well as the first results of implementation of the state digitalization program adopted in Russia. Finally, the method of analysis of investments effectiveness into digital assets and digitalization was suggested, this method is assumed to be used in the future research when more data on the results of digitalization program implementation in Russia are available.

Keywords

digital transformation, digitalization program, regions of Russia, effectiveness of investments in digitalization

JEL Classification

J01, O18, R10

Dynamics of digitalization indicators in Russia on 2015-2018

The process of digitalization creates new types of economic activity as well as changes or cancels many existing ones, allowing to produce and consume many new types of products and services and in overall creates the whole new economic sectors, jobs, ways of life and work. In this section we present the results of analysis of ongoing digitalization process in Russia and its current state. For the purposes of analysis different statistical data sets were used such as (Indikatory tsifrovoj ekonomiki, 2019; Informatsionnoe obshchestvo, 2019; Regiony Rossii, 2019), from which 49 indicators were selected and after excluding 12

indicators by the results of correlation analysis 37 remained ones were united into the following 6 groups: digital skills of people, availability of digital goods for people, quality of working life and social sphere in conditions of digitalization, state electronic services and security of people informational activities, so that the analysis was done for each group of indicators separately.

Digital skills of people. In the whole, the skills level of digital devices use in Russia increased in 2018 comparing to 2015. The shares of total population aged from 15 to 72 changed for the following indicators:

- working with text editors – increased from 53.4 to 57%;
- file transfer between computers and peripheral devices increased from 37.9 to 43.2%;
- using software for editing photo-, video- and audiofiles slightly increased from 29.3 to 29.4%.

Along with that some decrease was observed for working with electronic table from 29.9 to 28.9%. Also, it should be mentioned that in 2018 the level of working with text editors indicators decreased comparing to 2017 by 2.5 percent units. Other indicators either slightly increased or remained the same. As a result, we could say that basic skills of working with digital devices grew though by the end of considered period the negative dynamics for one of indicators appeared. However special skills showed steady increasing dynamics and all users possessing them have also basic skills of computer using.

At the same time the increase of factors significance preventing from using the Internet was observed. They are measured as a percent rate of total population aged from 15 to 72 who do not use the Internet or used it more than a year ago. So far, the unnecessary indicator value increased from 69.7% in 2015 to 69.8% while lack of skills for Internet use increased from 21.8 to 30.5%. Such a dynamics shows the growth of digital inequality in the Russian society.

Availability of digital goods for people. Level of personal computers use by Russian households slightly decreased in the considered period from 72.5% in 2015 to 72.4% in 2018. This can be explained by saturation of such devices consumption by the people and switching to other ones such as smartphones and tablet computers. Along with that the highest increase rates occurred in the Republic of Ingushetia (15.1% percent units), while the largest decrease rates were on the Republic of Mari El (16.1%).

Dissemination of digital devices in households stipulated advancement of broadband Internet access. In the whole Russia this indicator reached 73.2% in 2018 comparing to 66.8% in 2015. Such a growth could be explained by increased availability of broadband access, widening of ways of its application due to multiplying of types of used devices. The highest growth rates are again in the Republic of Ingushetia (by 52.7 percent units), the increase is also considerable in the Magadan region (44.8%). The biggest contraction occurred in the Yaroslavl region (-5.4%), the Arkhangelsk region (-6.5%), the Republic of Kalmykia (-5.0%), the Chechen Republic (-30.8%). We could outline two main reasons of people abstaining from using the Internet. Whereas the indicator of technical ability absence to connect to the Internet slightly decreased from 7.7% to 7.2% in 2018, the people refusal from the Internet due to high costs of getting Internet access point as a percent rate of total population aged from 15 to 72 who did not use the Internet or used it more than a year ago increased from 12.3% to 14.6%. The latter could be connected with ruble devaluation happened in 2014-2015 which led to the increase of costs for firms providing Internet access and rising their prices. The highest growth rates of refusal from Internet due to high costs were observed in the Chukotka Autonomous Region (27.6%), and in the Ulyanovsk region this indicator decreased by 18 percent units. Therefore, the indicators shown above lead to conclusion that full availability of digital technologies is still not achieved in Russia. Not all households have personal computers and the Internet access. The main reason of access absence is in high costs for getting Internet access.

Quality of working life in conditions of digitalization. High rates of personal computers use were observed in the organizations in Russia, excluding small entrepreneurship companies, so this indicator grew by 1.7 percent units in 2018 comparing to 2015 and reached 94%. In the Republic of Ingushetia it reached 100%, in the city of Moscow it was at 100% in 2017 but decreased by 0.1% in 2018. The lowest value was in the Republic of Dagestan (67.6%).

Despite high levels of personal computers use their numbers per 100 workers have not very high values and they do not show notable changes. So far there were 49 computers per 100 workers in 2015 and 51 ones in 2018. This could be explained by the absence of necessity to use them for all types of jobs and absence of necessity to digitalize all types of economic activities. Despite the large spreading out of computer techniques in organizations the local information network was used only by 63,9% of them in 2018 slightly increasing by 0.4% comparing to 2015. The use of electronic document flow systems increased from 62.7 to 68.6%. A good dynamics is shown by the expenses on information and communication technologies development in organizations. While in 2015 the average levels of such costs in Russia were 8.08 mln rubles per 1000 people, then in 2018 they reached 11.42 mln rubles. However high level of inequality is observed. These costs are significantly higher in the city of Moscow. In 2018 they reached 72.33 mln rubles per 1000 people which is almost 2 times higher than in 2015. In other regions they are much lower, for instance the second region by this indicator is the Nenets autonomous okrug, which has the value of 23.96 mln rubles per 1000 people, though it is still higher than Russian average value. The lowest expenses are in the Republic of Dagestan with the value of 0.44 mln rubles per 1000 people.

Digitalization of social sphere and services. During the period of 2015-2018 the growth rates of educational institutions share having broadband Internet access were not very high. The reason is that fast growth of this indicator of education digitalization was going in Russia in the earlier years, so in the considered period the country has already come to the point of saturation. The same relates to the share of educational institutions having a web-site – currently this indicator is close to 100%. However, the growth of computer numbers in educational institutions continues, at the present time for different regions it is about 20-25 computers per 100 students, or in other words, 1 computer per 4-5 students, which is still not quite enough for educational activities. We could expect that this indicator would get saturated at the level of 35-40 computers per 100 students.

The process of digitalization of other spheres of social services is 1-2 steps back from educational sphere. For instance in medical organizations saturation in numbers of computers and level of Internet access is still not achieved, the growth of this indicator from 2015 to 2018 reached 21% on the average in Russia and in 2018 it reached 35 computers per 100 workers of medical organizations versus 33 in 2017, i.e. 1 computer per 3 workers. This value is higher than the analogous indicator in educational institutions (per 100 students), however saturation level (target value) for this indicator is also higher for medical organizations, as it should be at least 1 computer per 2 workers (50 computer per 100 workers) of medical organizations, so its potential of growth is at least 50%. The same situation is with Internet access – this indicator shows fast growth (33% on the average in Russia during the considered period), but in 2018 there were only 24 computers with Internet access per 100 workers of medical organizations, i.e. 1 computer per 4-5 workers which looks very insufficient. In other words, the level of digitalization of medical organizations is lower than educational ones, which is also backed by the share of medical organizations having web-site that is quite far from 100% (in contrast to educational institutions) and was at 80% in 2018. During 2015-2018 it grew by 10%.

Culture organizations and museums lag behind analogously. Fast growth of indicators of their digitalization (number of culture organization having web-site; share of museum items included in electronic catalogue; volume of electronic catalogues in libraries etc.) by dozens and hundreds percent during the considered period is itself a positive development but it is

another confirmation of this retardation though with perspective of its liquidation in the future. At the same time low level of digitalization for these indicators provides low comparative basis in relation to which high growth rates are computed.

Finally, the fast growth in the considered period is shown by the share of people using the Internet for purchasing goods (35% on average in Russia in 2018, while in 2015 it was only 14%). As households in Russia are ahead of many social organizations in their level of digitalization and are approximately at the same level as educational institutions we could say that they are also entered the second stage of digitalization – after vast majority of people (households) obtained computers with Internet access they are now more and more capable to use the new advantages provided by this access.

State electronic services. During the years 2015-2018 there was considerable growth of population share aged from 15 to 72 interacting with state and municipal authority bodies for getting electronic state services. While in 2015 it was 29.9% then in 2018 it reached 72.9%, i.e. it grew 2.5 times during 4 years. Among people getting services from state authorities bodies the share of those using the Internet for such purposes had also increased by 2.5 times, namely from 35.2% in 2015 to 74.8% in 2018. So far fast growth of the Internet using for getting state electronic services could be explained by active implementation of measures aimed at digitalization in wide variety state services – in taxation, documents processing etc., in particular through the special Internet portal "Gosuslugi". The level of success of this program is reflected in particular in how people estimate quality of state and municipal services supplied through the Internet. The share of people using the Internet for getting state services and fully satisfied with their quality grew from 57.5% in 2015 to 73.2% in 2018.

Speaking of most prominent regions in that respect we could say that highest share of people used electronic state services were in the Yamalo-Nenetsk autonomous okrug, Kurgan region, the Republic of Bashkortostan, the Republic of Altai, while the lowest share was in the Republic of Adygeya, Oryol region and Tver' region.

As a result, we could note that among different directions of digitalization of Russian economy and social sphere the electronic state services supply has become one of the most successful. However despite already reached good results it is too early to speak about saturation and target level achievement, as the growth continues with quite high rates (in 2018 the share of people using electronic state services grew by appr. 11%). We could expect that saturation will occur when this indicator value is more than 90%.

Security of people informational activities. During the period of 2015-2018 the gradual growth of people's share not facing informational security problems in Russia was observed (from 66 to 72%), and this growth happened in the majority of federal districts, only in the North Caucasian and Volga federal districts a slight decrease occurred. At the same time, the share of people using the tools of information protection remains at appr. the same level during the years 2015-2018 (about 83 – 86%). The combination of these two trends allows to conclude that as a result of people's growing skills on using computers and the Internet the people's realization of information security principles improves, namely which actions are better not to make in order not to face data leaks and other problems, not relying only on computer tools of information protection (on antivirus programs, for example).

First results of implementation of the national program "Digital economy in the Russian Federation"

In 2018 the national program "Digital economy in the Russian Federation" aimed at providing accelerated implementation of digital technologies into economy and social sphere was adopted in Russia. The planned period of program activity is from 1 October 2018 to 31 December 2023. Execution of the national programs suggests implementation of such projects as "Normative regulation of digital environment", "Staff for digital economy", "Information

security", "Digital technologies" and "Digital government control" (Passport of the national program, 2018).

Each separate project has its own planned parameters detailing the general ones (Directions of implementation of the national program, 2019). Basing on published statistics for 2018 we could consider some program parameters on which current factual statistical data are available. For preliminary analysis of the national program ongoing implementation let's consider several parameters included for some of its directions (table no. 1).

Table no. 1 Some planned parameters for different directions of implementation of the national program "Digital economy in the Russian Federation".

№	Parameters	Period, years						
		2018	2019	2020	2021	2022	2023	2024
	"Staff for digital economy" project							
1	Share of people having digital literacy skills and key competences of digital economy, %	26	27	30	32	36	38	40
	"Information infrastructure"							
2	Share of households with available broadband Internet access, %	75	79	84	89	92	95	97
3	Share of medical organizations of state and municipal health care systems (hospitals and clinics) having Internet access, %	95	100	100	100	100	100	0
4	Share of state (municipal) educational organizations implementing educational programs of general education and/or secondary professional education having Internet access, %	39.5	56.6	79.8	100	100	100	100
5	Share of government authority bodies, local authority bodies and state extrabudgetary funds having Internet access, %	18.8	18.8	18.8	18.8	59.4	79.7	100
	"Digital government control" project							
6	Share of citizens and commercial organizations interaction with state (municipal) bodies and budgetary organizations carried out in a digital mode, %	20	25	30	40	50	60	70
7	Share of prioritized state services corresponding to the target model of digital transformation (supply without necessity of personal attendance of state bodies and other organizations with the use of registry model online (automatically, proactively), %	3	6	15	40	60	50	100

Source: Composed by the authors basing on (Directions of implementation of the national program, 2019)

Basing on the parameter of digital literacy and possessing digital economy skills we could observe some positive trends in Russia. It follows from, as shown above, factual values of such indicators as working with text editors, file transfer between computers and peripheral devices and using software for editing photo-, video- and audiofiles in 2018 surpass the planned one by 26%. Of course, the parameter of digital economy skills is wider and includes many other aspects besides factual indicators listed above, however these indicators could witness about positive development in this direction. For instance, 57% of Russian population can work with text editors. The lowest value has factual indicator of working with electronic tables which is only 28.9% of population, though it still surpasses planned value of general parameter for 2018.

The factual availability of broadband Internet access in 2018 was slightly lower than planned one, namely 73.8% versus 75%. The reason could be in the growing significance of reasons abstain from using the Internet by the people, which was described in the previous section. While the planned parameter of "Share of medical organizations of state and municipal health care systems (hospitals and clinics) having Internet access" is equal to 95%, factual share of medical organizations having web-site was 79.61% in 2018. Unfortunately, there are no available data on the factual indicator of medical organizations share having Internet access. Planned share of state (municipal) educational organizations implementing educational programs of general education and/or secondary professional education having Internet access was only modest 39.47% for 2018, while factual share of educational organizations of higher professional education having Internet access was 75.26%. Such a discrepancy could be explained by increased financial resources of higher professional education institutions, first of all due to paid forms of education.

Some questions arise concerning planned parameters of citizens and commercial organizations interaction with state (municipal) bodies and budgetary organizations carried out in a digital mode (parameters No. 5, 6 and 7 on the table 2), which have low values. Factual values of indicators of state electronic services supply are notably higher, as was shown in the previous section. For instance, the share of people using the Internet for getting state and municipal services was 74.8% in 2018, while planned parameters were not higher than 20%.

Method of analysis of investments effectiveness into digital assets and digitalization

The authors suggest the following method for analysis of effectiveness of investments into digital assets and the whole process of digitalization, as they intend to use it in future research when more data are available on the results of state digitalization program implementation in Russia. Within the available data base effectiveness of investments (financial resources) could be analyzed, for instance, in a region-wise or branch-wise way granting corresponding production functions built.

Production functions (in a broad sense) are interrelations between production factors used (materials, labor, finance, natural resources) and production output (a certain final outcome) (Badmaeva, 2019; Dolan, 2013)

$$F(x, y, a) = 0,$$

where y is an output vector, x – resources vector, a – parameters vector.

Such a description of relation between resources utilization and production results suggests that effects connected to longevity of production cycle are not taken into account. This in turn could be considered acceptable assuming that temporal unit for which a production function is built considerably surpasses production cycle duration. Instead of general representation of a production function given above one often uses its partial case called output function:

$$y = \varphi(x, a).$$

The idea of production function is closely connected to the condition of production capacities set which is defined as a set of all possible combinations of production costs and outputs:

$$\{x, y\} \in G(a),$$

where $G(a)$ is a set in the space of resources and outputs depending on a . A transition from a set of production capacities to a production function (function of output) requires construction of a subset of all effective (Pareto-optimal) points of the set $G(a)$ or its Pareto frontier. The production function itself is a depiction of Pareto frontier for the set $G(a)$

Let's consider a scalar power-law production function which is most often used in economic and mathematical studies:

$$p = \pi(x) = \pi(x_1, x_2, \dots, x_n) = a \prod_{j=1}^n x_j^{\alpha_j} = ax_1^{\alpha_1} x_2^{\alpha_2} \dots x_n^{\alpha_n}, \quad (1)$$

where a is a positive parameter.

Marginal effectiveness of a j^{th} resource looks like:

$$\frac{\partial p}{\partial x_j} = \frac{\alpha_j}{x_j} \pi(x), \quad x_j > 0, j = 1, 2, \dots, n \quad (2)$$

Average effectiveness of a resource is

$$\frac{p}{x_j} = \frac{\pi(x)}{x_j} = ax_1^{\alpha_1} x_2^{\alpha_2} \dots x_j^{\alpha_j-1} \dots x_n^{\alpha_n} \quad (3)$$

Elasticity function could be used for analysis of resources (investments) effectiveness in case of suggested underfunding of a certain economic subject. For a power-law production function the elasticity function would look like

$$\Theta = f(\Delta) = 1 - \prod_{j=1}^n (1 - \Delta_j)^{\alpha_j} = 1 - (1 - \Delta_1)^{\alpha_1} (1 - \Delta_2)^{\alpha_2} \dots (1 - \Delta_n)^{\alpha_n} \quad (4)$$

$$\text{where } \Theta = \frac{p^0 - p}{p^0}; \quad \Delta_j = \frac{x_j^0 - x_j}{x_j^0}, \quad j = 1, 2, \dots, n \quad (5)$$

Basing on (5) we have: $\frac{p}{x_j} = \frac{p^0(1-\Theta)}{x_j^0(1-\Delta_j)}$; when $\Theta < \Delta_j$, i.e. when a subject has an

adaptive (compensating) ability towards undersupply of a j^{th} resource then effectiveness of a given resource utilization increases comparative to a normative (planned, program) one; when $\Theta > \Delta_j$ then effectiveness decreases; when these parameters are equal the effectiveness remains constant.

Conclusions

In a whole, skill level of digital devices utilization in Russia increased comparing to 2015, but some indicators remained unchanged in 2018 comparing to 2017, while the indicator of using text editors skills decreased. This could be a signal of decreasing rates of people digital literacy growth.

Speaking of availability of digital products for people we could say that the necessary level of capital is nearly reached. Along with that growth of broadband Internet access availability occurred but 100% level is still not reached. The main reason – refusal from Internet use due to high costs of getting access to the Internet.

High level of personal computers use is observed for organizations in Russia excluding small business organizations. However this level divided per 100 workers is not so high and does not show significant changes during the years 2015-2018. A good dynamics is demonstrated expenditure on information and communication technologies in organizations. While in 2015 such expenditures were 8.08 mln rubles per 1000 people on average in Russia, then in 2018 they reached 11.42 mln rubles.

In the accepted government program "Digital economy in the Russian Federation" ambitious targets aimed at high level of digitalization achievement by 2024 in general, while by some separate indicators even earlier are set. Considering planned and available actual indicators values for 2018 we could say that in general trends of the program implementation are positive, though for some indicators planned levels remain unachieved. However, the problems with analysis could arise because of complexity of getting actual statistics on many indicators included in the program.

Analysis of main indicators of digitalization of social sphere institutions (education, medicine, culture) allows to conclude that they are on different stages of digitalization. For instance, in educational institutions the necessary level of saturation with computers, Internet access etc. has been mainly achieved, therefore they can use the newly gained capabilities in the digital sphere for educational purposes. This relates all before to online (distant) education which is a principally new method of educational activity. It should also be noted that readiness for online education revealed itself in the current pandemic situation when nearly all educational institutions in Russia managed to switch to fully online regime of education without significant problems.

Russian households are also on the second stage of digitalization, i.e. they use new digital capabilities, which is reflected, for example, in such indicator as purchasing goods through the Internet and distant consumption of services.

At the same time medical and culture institutions are still on the first stage of digitalization, i.e. saturation for digitalization indicators necessary for full-fledged use of digital capabilities is still not achieved in these spheres. It should be noted that in contrast to education, the medicine is not suggested to transit massively to the online form, but digital capabilities could be used in many other directions in the medical sphere.

Speaking of electronic state services we can see that during the considered period of time it has essentially transited from the first stage of digitalization to the second, i.e. from increasing digital capabilities to their intensive utilization and this sphere is so far takes intermediate position in the level of digitalization between education and medicine. In other words, active growth of digitalization indicators in the sphere of electronic state services allowed to come very close to the levels of saturation if not to achieve them.

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SHARING ECONOMY AND ENTREPRENEURSHIP: A CASE STUDY FROM ROMANIA

Cristian Negruțiu¹, Vasile Dinu², Cristinel Vasiliu³ and Ruxandra Bădescu⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: cristian_negrutiu@yahoo.com; E-mail : dinu_cbz@yahoo.com

E-mail: cristi_vasiliu@yahoo.com; E-mail: ruxbadescu@gmail.com

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Abstract

The present paper attempt to bring a contribution to a very significant topic of today world. Sharing economy has grown in the last period and extended its reach to all business sectors. The research will be done in the context of entrepreneurship and the new wave of tech start-ups.

The main objective of the research is to define the sharing economy and see how it's applied by entrepreneurs. To this end, we have chosen to perform a literature review, where various business models associated with sharing economy will be analyzed. The practical part of the research is made by a case study featuring a start-up active in the toys industry in Romania. The results of the study show that sharing economy is strongly linked with entrepreneurship. We expect that more initiatives will be launched in the future to capture the opportunities offered by sharing economy in various industries.

Keywords

Sharing economy, entrepreneurship, start-ups, toys industry, e-commerce

JEL Classification

L24, L26, L81, M13

Introduction

Entrepreneurship is the blood of the world economy. Each and every company has started small, through the courage of one or more people who dare to dream and implement new ideas. Through this cycle, the development was fueled on a continuous basis.

However, the last years brought some concerns – can we continue the growth on an extensive base, without any limitations? The climate crisis, environmental issues and depletion of natural resources have added additional concerns. The concept of sharing economy emerged from these concerns, although people shared resources from ancient times.

The emergence of new technologies enabled sharing as a mass phenomenon, so entrepreneurs picked up this new mega-trend and formed innovative companies, like Airbnb or Uber. In all economic sectors appeared examples of companies capitalizing the sharing economy concept.

Therefore, the main research question is how the principles and opportunities of sharing economy are exploited by entrepreneurs in Romania. Subsequent research themes referred to industries and modalities where sharing economy has been applied.

One particular example is the fast-growing industry of games and toys for children. One specific insight of this industry is that parents spent a lot of money for toys that kids are using for a very short term. Based on this insight, courageous entrepreneurs build a subscription-based model, called *Evertoys – toys as a service*.

Literature review

Although sharing economy is a concept that has been broadly addressed in the recent literature, there is still a strong debate about this concept. Botsman, presents the ambiguity surrounding this term, maintaining that “sharing economy lacks a shared definition” (2013, p.1). A famous journalist, Cerise Sudry-le-Dû, quoted by Acquier, Carbone and Massé, affirm that “sharing economy is a catch-all that includes ambitious young Internet start-ups, companies that are worth millions on the stock market, and neo-hippies with political and social objectives” (2019, p.1). Menor-Campos, de los Baños García-Moreno, López-Guzmán, T. and Hidalgo-Fernández (2019) founded different terms related to sharing economy, that are partially synonyms, but partially refer to a certain specific: collaborative consumption/economy, access-based consumption/economy, peer to peer economy, gig economy, economy of access.

In the context of the current study, it is important to make a distinction between collaborative economy and sharing economy. According to Ertz, Durif and Arcand, collaborative economy is a “set of resource circulation systems which enable consumers to both obtain and provide, temporarily or permanently, valuable resources or services through direct interaction with other consumers or through a mediator” (2018, p.1). The most important feature of this definition is the fact that consumers are also suppliers, so they trade one with each other. They can do this on a permanent or temporary basis, which translates into a more or less economic purpose. The presence of a mediator is not necessarily required.

In contrast, sharing economy is defined by Acquier, Carbone and Massé “as a group of initiatives that improve the availability and efficiency of sub-utilized resources through exchanges between participants or promoting access over ownership” (2019, p.7). The concept assumes a clear economic purpose of efficiency improvement, whereas consumers are different versus suppliers. This is done normally through the presence of a mediator that promotes the improvement and has trade relationships with the other participants (Table no. 1).

Table no. 1 Collaborative versus Sharing Economy

Characteristic	Collaborative	Sharing
Interaction	Direct	Through a mediator
Purpose	Exchange of goods	Efficiency improvement
Trade	Among participants	Mediator trades with participants
Time-bound	Ad-hoc, temporary	Permanent

Source: Acquier, Carbone and Massé (2019) and Menor-Campos, de los Baños García-Moreno, López-Guzmán, T. and Hidalgo-Fernández (2019)

Another key term of Acquier, Carbone and Massé (2019) definition is access over ownership. In other words, a consumer will use the good/service for a limited period of time, instead of buying.

The business models in which sharing economy operates are also various. Different authors have studied them and try to categorize in different segments. In a recent study (2016),

Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (European Commission) and PWC produce a report about sharing economy in Europe, that maintained the fact that sharing economy is now a megatrend that changed our lives. This change is done mainly through start-ups, as they found at least 275 collaborative economy platforms at the date of the report. In regards to business models, they identified five main sectors: peer-to-peer transportation, on-demand household services, peer-to-peer accommodation, on-demand professional services and collaborative finance.

Acquier, Carbone and Massé (2019) consider that business models of sharing economy should be evaluated on two axes: value creation mechanisms and value capture and distribution mechanisms. The first axe involves two mechanisms – peer-to-peer intermediation and centralized resource pooling, while the second refers to dominant economic focus (for-profit organizations) and dominant value creation (non-profit organization). Based on these mechanisms, Acquier, Carbone and Massé (2019) propose the following matrix of business models (Fig no. 1):

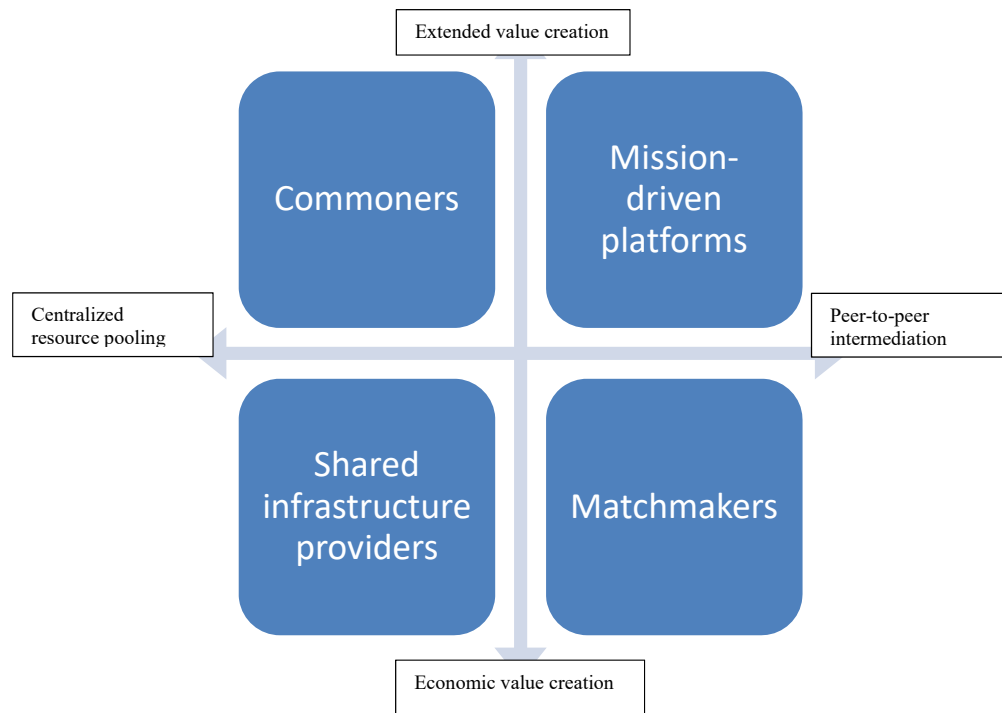


Fig. no. 1 Business models of sharing economy

Source: Acquier, Carbone and Massé, 2019

Wruk, Oberg and Friedrich-Schieback (2019) looked at business models from an industry/specific sector perspective. Based on an extensive literature review, they identified several sectors where sharing economy is present in an extensive way (Fig no 2).

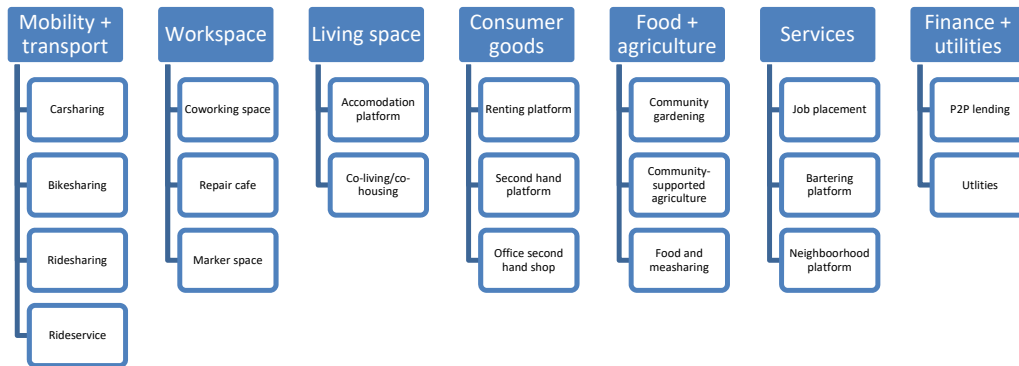


Fig. no. 2 Sharing economy sectors

Source: Wruk, Oberg and Friedrich-Schieback, 2019

Based on previous research, Barbu, Bratu and Sirbu (2018) synthesize the business models in three main categories:

1. Access-based business model – the consumer uses the product, instead of buying (see also Acquier, Carbone and Massé, (2019)). The model translates also a shift into customer perception where access is more important than ownership. The platform owns the tangible/intangible assets, which are leased/rented to consumers. The model is very popular in software industry, in the form of software-as-a-service (SAAS), but it expanded to other industries, under the name product-as-a-service (PAAS).
2. Marketplace/platform economy – the consumers exchange goods/services with suppliers and vice versa. The platform acts only as mediator and facilitator and does not own the assets subject to exchange. In essence, it's a matching and balancing of supply and demand, especially when supply is in excess and demand is high.
3. On-demand service provider – the model refers to professional services performed via an Internet platform. It requires two categories of actors – provider of services and those who request them.

Another important aspect of the sharing economy is its impact on society. That's true, of course, for the non-profit organizations, but also for the entities that are built for profit. The literature on this topic is quite large, showing opposite views on the economic, social and environmental impact of sharing economy.

These positive views highlight the sustainability associated with sharing economy. People tend to consume less, re-use the goods and idle capacities are un-tapped. Large and monopolistic companies see their power lowered by small actors, towards a "conscious capitalism" (Acquier, Carbone and Massé, 2019). Due to technology, people that do not know each other can exchange now goods, services and ideas.

On the negative side, sharing economy has introduced unregulated (and not controlled) entities that eludes the law. The Uber controversy in many countries illustrates perfectly this phenomenon. Other concerns refer to working conditions, which transforms employees into sub-contractors and freelancers not protected by social regulations. Last, but not the least, the initial, moral drivers of sharing economy have been transformed into pure economic reasons, from the perspective of business ethics (Etter, Fieseler and Whelan, 2019).

Toys industry in Romania

In order to capture the main characteristics of toys industry in Romania, we will use a recent study published by Euromonitor International (June 2019).

The headlines of the study show that the toys market has increased with 11% in 2018, reaching RON835 million. It is one of the few industries that still enjoys double-digit growth, thus attracting new players. The market is dominated by imported toys, with Lego Romania consolidating its position as leader. Apart from traditional channels, Internet retailing is becoming more popular.

The study identifies the main important trends of the market:

- Major International Licenses Dominating the Marketplace
- Shift Towards Environmentally Friendly and Sustainable Toys
- Harder to Capture Children's Interest

As regards to competitive landscape, the main ideas presented in the study are:

- Lego Romania Is the Leading Player in the Category
- Private Label Is Expanding
- Toys Borrowing A New Concept with Great Potential – this item mentions specifically Evertoys as an example of an innovative idea in the toys industry

Evertoys – a case study of sharing economy

From the above description, the market seems ready for a disruptive concept like Evertoys.

Evertoys is a toys and games rental service targeted to become an ecosystem that will allow customers to provide meaningful, changing and fun learning experiences to their children. It is a subscription-based system that mainly targets medium and high-income urban families with children from 0 to 14 years old.

Evertoys' vision is a world in which it is easy for every child to have the best toy at the right time, every time.

The strategy of the start-up is to achieve a leading position in the toy and game rental market in the region, always excelling in diversity, ease of ordering and quality of customer relations. The business model is matching the principles of sharing economy and recurrent income. The model is based on three pillars:

- Several subscription levels that give access to a certain number and types of individual toys to be rented
- One (one way) subscription option for a prepackaged box of selected toys aimed at educational activities for the ages 2 – 10 yrs.
- Monetized marketplace for toys and toy/children related goods for both B2C and B2B customers. This also includes the acquisitions through Evertoys of used toys from its clients. To achieve this, the customer value proposition - which is coherently delivered through channels of distribution - will be based on corporate values:

Trust | Flexibility | Competence | Ease of use | Unique learning experiences | Original content
The system is very simple and (for the customer) is a three steps process (Fig no 3):

- Subscribe.
- Choose the toys
- Exchange the old box for a new one



Fig. no. 3 Evertoys business model

Source: Company data and authors' own research

While Evertoys keeps the toy selection experience as close as possible to the usual internet shopping experience, there are some differences, mainly due to the intention to build an ecosystem.

The main innovation within the toy market is the fact that one recurrent and very affordable payment will give access to all the toys and games. The transactional subscription process is separated from the toy selection process. This offers a high degree of security and flexibility to the customer, and a high degree of control to the company. While the recurrent subscription works in the background, without ever a need to touch it again, the customer can browse, view and select the products based on the virtual currency, without the danger of making bad financial decisions. Particularly because there are no more financial transactions involved, many families let their children to browse, choose and order the desired toys directly.

The ecosystem extends beyond the selection of the next toy box: once the credit card is registered with Evertoys, the customer can choose to directly buy a toy, without having to go through a secure payment again. The virtual currency can be saved and accumulated and even used to get toy discounts from Evertoys or from their partners.

Evertoys underlines the sharing character of its business also by offering a Toy Buy Back Service. They take all the outgrown toys of our customers and reward them with virtual currency, so they can get new ones. Part of this stock will enter the Evertoys platform, part of it will be donated to partner charities.

The disruption that Evertoys started to create is the following: Toys and games, as a fast-paced need for development and education, should become more and more a commodity, rather than an inventory. Why pay for something that keeps its relevance for a few months at the best, if you can choose to renew your stock rapidly and as often as needed.

Simplified, the entire idea revolves around this concept: *Evertoys – toys as a service*.

Conclusions

Sharing economy is a growing trend of the last period. This trend was embraced not only by large corporations, but also by courageous entrepreneurs.

The literature agrees that sharing economy concept is based on the need to further increase the usage of idle resources, thus adding also social benefits. Several business models were developed in this context and the concept spread into several industries.

IT Technology added an extra layer of development for the sharing economy. By using specific platforms, entrepreneurs manage to develop successful and viable companies. Examples can be seen around us, from Uber to Airbnb.

In this context, we presented a case study from Romania, where a very interesting concept was developed in the toys industry. The founders of the company not only managed to create a solid company, but an entire ecosystem, that includes not only parents, influencers and media.

The research is a starting point for a larger investigation into sharing economy in Romania. Apart from the consumer goods (toys in this case), other industries are embracing the principles of sharing economy. We can enumerate here logistics/supply chain, real estate, waste management etc.

These further investigations into other industries will address the limitations of the current research, that was based only on a literature review and a single case study. The subsequent research will provide a complete overview of sharing economy business models in Romania.

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PRODUCT DIFFERENTIATION INFLUENCE IN THE COURNOT, BERTRAND AND HIERARCHICAL STACKELBERG DUOPOLIES

Ciprian Ruscescu¹ and Mihai Daniel Roman²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: rusescuciprian18@stud.ase.ro; E-mail: mihai.roman@ase.ro

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Abstract

Imperfect competition is one of the main topics of modern economic analysis and it can be easily distinguished in the current economic climate. Whether we are considering the general economic spectrum or a certain industry, there are a few concepts standing out due to their impact on the tools and methodologies used in market analysis: price and quantity competition scenarios differences, timing of competitors movement in a duopoly game, role of product differentiation in determining market price/output levels and the presence of the market hierarchical structure. In order to explore the topic (imperfect competition) and, in particular, the impact of the above mentioned concepts in a duopoly market, this paper is using a consistent framework, making use of a product differentiation base model. The paper is deliberating on the market outcomes under price and quantity competition (Cournot and Bertrand simultaneous moves scenarios) but also sequential moves output competition (Stackelberg duopoly). It is also presenting a numerical simulation analyze that can be used to efficiently explore the model properties under the assumption of products differentiation degree variation.

Keywords

Cournot model, Bertrand model, Stackelberg model, oligopoly, stability, product differentiation.

JEL classification

C72, D01, D43, L13

Introduction

One of the main forms of imperfect competition is the oligopoly. During various oligopoly theories over the years, three standard textbook models have been developed in a tentative to explain both the economic output and pricing related decisions: Cournot model (1838), Bertrand model (1883) and last but not the least Stackelberg model (1934). Due to the

existence of multiple types of firms interaction and the complex nature of the interdependences between them, the use of only one oligopoly model is not adequate, therefore this paper will consider the three above mentioned models. There are also at least four key aspects which should be considered at the start of any market structure analysis: the decision of competing in output or price terms (very important topic in industrial organization), the timing of the competitors movement (simultaneous or sequential), the products typology (homogeneous or differentiated) as well as the existence / absence of a hierarchical structure. Subject to the above mentioned factors mixture, the market performance and profit distribution will be significantly differed.

In both Cournot or Bertrand models, the players are choosing their strategy simultaneously, however whilst Cournot player establish its output level (with price being determined by some unspecified agent and triggering market demand to equal the aggregate offer), Bertrand player will focus on the selling price (with firms being constrained to immediately meet the resulting customer demand). Stackelberg model instead is an hierarchical model with firms choosing their output level sequentially. The sophisticated firm (the leader) takes into account its ability to manipulate the other firm's output, while the naïve firm (the follower) adopt a Cournot behavior, considering his rival's output level fixed.

The current literature comparing the two output terms equilibria (Cournot and Stackelberg) is abundant. The most common conclusion is that the Stackelberg equilibrium is more efficient than the Cournot equilibrium, total surplus being higher in the sequential game scenario, as per Boyer and Moreaux (1986 and 1987), Daughety (1990); Robson (1990), Albaek (1990), Anderson and Engers, (1992), Amir and Grilo, (1999), Ino and Matsumura, (2012) papers. Other researchers were focused on the direction of simultaneous game scenarios comparison (Cheng, 1985; Judd, 1989; Symeonidis, 2003; Haraguchi and Matsumura, 2015; etc). In return, the aggregate analyze including all the three above mentioned models, has received scant attention in the current literature.

The present paper is considering a differentiated products scenario, based on which we are trying to explain Cournot, Bertrand but also Stackelberg static behavior, highlighting some interesting aspects such as firm equilibrium, market surviving potential and the product differentiation impact on Nash equilibrium / subgame perfect equilibrium theory. The originality of this paper consists of the unique approach of bringing together and comparing simultaneously, all three mentioned models, not just theoretically, but also using numerical simulation. The principles of the related mathematic model are also presented below.

The model

The scenario used in this paper is one with plenty consumers but only two producers of differentiated goods. The consumers are targeting to maximize their own satisfaction, described as the difference between own utility function and the necessary spending for purchasing required product amounts (no budgetary constraints are considered):

$$S = U(q_1, q_2) - \sum_{i=1}^2 p_i q_i \quad (1)$$

The chosen utility function belongs to quadratic class (non-linear type), having separable variables and being also strictly concave (see below). The last hypothesis involves double derivability, the existence of the second order derivate and also its negativity.

$$U(q_1, q_2) = aq_1 + aq_2 - \frac{bq_1^2 + 2dq_1q_2 + bq_2^2}{2} \quad (2)$$

where $a > 0, b > 0, d > 0$ (reflecting substitute products). Considering $b > d$, an imperfect substitutability is suggested, whilst setting $b = d$ a homogenous product scenario is assumed.

The starting point in duopoly direct / inverse demand function calculation, is the derivation of the consumer satisfaction function. Their expressions are determined as follows:

$$\frac{\partial S}{\partial q_1} = p_1 = a - bq_1 - dq_2 \rightarrow q_1 = \frac{a - p_1 - dq_2}{b} \quad (3)$$

$$\frac{\partial S}{\partial q_2} = p_2 = a - bq_2 - dq_1 \rightarrow q_2 = \frac{a - p_2 - dq_1}{b} \quad (4)$$

Applying substitution methodology, will result:

$$q_1 = \frac{a(b-d) - bp_1 + dp_2}{b^2 - d^2} \quad (5) \quad q_2 = \frac{a(b-d) - bp_2 + dp_1}{b^2 - d^2} \quad (6)$$

a system similar to those used before by Dixit (1979), Singh and Vives (1984), Imperato et al (2004), Tremblay (2011).

It can be noted the necessity that $b > d$ at this stage.

The production cost is further deemed identical for both players, via a linear function ($C=c*q$), also matching the marginal cost. Based on these assumptions, the profit function become:

$$\pi_i = (p_i - c)q_i, (\forall) i = \overline{1,2} \quad (7)$$

and further

$$\pi_1 = (p_1 - c)q_1 = aq_1 - bq_1^2 - dq_1q_2 - cq_1 \quad (8) \quad \pi_1 = \frac{a(b-d) - bp_1 + dp_2}{b^2 - d^2} (p_1 - c) \quad (9)$$

$$\pi_2 = (p_2 - c)q_2 = aq_2 - bq_2^2 - dq_1q_2 - cq_2 \quad (10) \quad \pi_2 = \frac{a(b-d) - bp_2 + dp_1}{b^2 - d^2} (p_2 - c) \quad (11)$$

The market output level / the selling price depends on the two firms interaction type. If the duopolists choose to adopt an output strategy, deciding to take decisions simultaneously, without knowing his rival answer, we face a Cournot behaviour. By solving the profit maximization problem in output terms, we can find out the best response functions. Further application of substituting method leads to the Nash equilibrium output values:

$$\begin{cases} \frac{\partial \pi_1}{\partial q_1} = a - 2bp_1 - dp_2 - c = 0 \\ \frac{\partial \pi_2}{\partial q_2} = a - 2bp_2 - dp_1 - c = 0 \end{cases} \rightarrow \begin{cases} q_1 = \frac{a-c-dq_2}{2b} \\ q_2 = \frac{a-c-dq_1}{2b} \end{cases} \rightarrow q_1 = \frac{a-c-d\frac{a-c-dq_1}{2b}}{2b} = \frac{2ab-2bc-ad+cd+d^2q_1}{4b^2}$$

$$q_1(4b^2 - d^2) = a(2b-d) - c(2b-d) \rightarrow q_1 = \frac{a-c}{2b+d} \quad (12) \rightarrow q_2 = \frac{a-c-d\frac{a-c}{2b+d}}{2b} = \frac{a-c}{2b+d} \quad (13)$$

The corresponding prices, will be immediately determined:

$$p_1 = p_2 = a - (b+d) \frac{a-c}{2b+d} = \frac{ab-bc+c(2b+d)}{2b+d} = c + \frac{b(a-c)}{2b+d} \quad (14)$$

and finally the profits level become

$$\pi_1 = \pi_2 = (p - c)q = \frac{b(a-c)}{2b+d} \frac{a-c}{2b+d} = \frac{b(a-c)^2}{(2b+d)^2} \quad (15)$$

If the duopolists decide to compete in price terms instead, their action path being also simultaneously manifested, the Bertrand scenario is revealed. Profit's first order conditions represent the starting point in the determination of the Nash equilibrium price:

$$\begin{cases} \frac{\partial \pi_1}{\partial p_1} = \frac{a(b-d)-bp_1+dp_2}{b^2-d^2} - \frac{b(p_1-c)}{b^2-d^2} = 0 \\ \frac{\partial \pi_2}{\partial p_2} = \frac{a(b-d)-bp_2+dp_1}{b^2-d^2} - \frac{b(p_2-c)}{b^2-d^2} = 0 \end{cases} \rightarrow \begin{cases} 2b p_1 - dp_2 = a(b-d) + bc \\ -dp_1 + 2b p_2 = a(b-d) + bc \end{cases}$$

$$\text{The equations system solution is } p_1 = p_2 = c + \frac{(a-c)(b-d)}{2b-d} \quad (16)$$

By substituting and solving the new equations system (q_1 and q_2 as unknowns), will obtain

$$q_1 = q_2 = \frac{(a-c)(b^2-bd)}{(b^2-d^2)(2b-d)} \quad (17)$$

$$\pi_1 = \pi_2 = (p-c)q = \frac{(a-c)(b-d)}{2b-d} \frac{(a-c)(b^2-bd)}{(b^2-d^2)(2b-d)} = \frac{b(a-c)^2(b-d)^2}{(b^2-d^2)(2b-d)^2} \quad (18)$$

If the firms sequential moving scenario is preferred to the simultaneous moving one, we are dealing with a Stackelberg model. Assuming player 1 will move first, the main problem will be to maximize its profit level, considering the subsequent move of his rival, which is not controllable but at list predictable. This aspect can be solved by using backward induction method. In the second stage, the follower chooses an output level to maximize profits given the output choice of the leader. In the first stage instead, first mover chooses its profit maximizing output knowing how his rival will respond. All the mathematic Appendix calculations, leads to the bellow mentioned subgame perfect equilibrium values:

$$q_1 = \frac{(a-c)(2b-d)}{4b^2-2d^2} \quad (19) \quad q_2 = \frac{(a-c)[2b(2b-d)-d^2]}{2b(4b^2-2d^2)} \quad (20)$$

$$p_1 = a - \frac{(a-c)(2b+d)}{4b} \quad (21) \quad p_2 = a - \frac{(a-c)[2b(2b+d)-3d^2]}{4(2b^2-d^2)} \quad (22)$$

$$\pi_1 = \frac{(a-c)^2(2b-d)^2}{8b(2b^2-d^2)} \quad (23) \quad \pi_2 = \frac{(a-c)^2(4b^2-2bd-3d^2)^2}{16b(2b^2-d^2)^2} \quad (24)$$

Comparing the equilibrium values of both output strategy games (Cournot and Stackelberg), we can reach the following conclusions:

- The leader's output level is higher in the sequential game, knowing that the follower will respond by cutting its own;
- The leader/the follower charge lower prices than in simultaneous moving game.
- Although aggregate profits fall, the leader win extra profits by taking a greater market share. This is the first-mover well – known advantage in the Stackelberg game.

Next paragraphs will analyze the $b = d$ situation - perfectly substitutes products scenario. The equilibrium values can be synthesized in (Table no.1):

Table no. 1 Cournot/Bertrand/Stackelberg homogenous products equilibrium figures

Strategic variable	p_1	p_2	q_1	q_2	π_1	π_2
Cournot model	$\frac{a+2c}{3}$	$\frac{a+2c}{3}$	$\frac{a-c}{3b}$	$\frac{a-c}{3b}$	$\frac{(a-c)^2}{9b}$	$\frac{(a-c)^2}{9b}$
Bertrand model	c	c	$\frac{a-c}{2b}$	$\frac{a-c}{2b}$	0	0
Stackelberg model	$\frac{a+3c}{4}$	$\frac{a+3c}{4}$	$\frac{a-c}{2b}$	$\frac{a-c}{4b}$	$\frac{(a-c)^2}{8b}$	$\frac{(a-c)^2}{16b}$

Source: authors' calculations

Remarks:

- The highest output level is reached in the Bertrand game, matching also the leader's output in the sequential model. In the simultaneous output scenario three quarters of this amount is produced, whilst the Stackelberg follower registered half of it.
- Cournot output strategy triggers the highest level of charged price with sequential strategy following closely. The Bertrand game instead, reveals the most interesting view with price matching lowest possible value for maintaining economic rentability, therefore the marginal cost (Bertrand paradox)
- Although Stackelberg's leader attain the highest profit level, aggregate value is maximized in the Cournot simultaneous game. As a consequence of Bertrand paradox, price strategy offers aggregate zero profit.

Simulation study case

The next paragraphs are trying to facilitate even a more detailed understanding of the three behavioral types noted by the paper, as products substitutability degree starts to change. With this precise goal, we exemplify a differentiated products duopoly scenario, assuming specific values for model entrance parameters, as follows: $a = 500$, $b = 3$, $c = 60$. With this hypothesis being made, we consider the main parameter of the model matching $d = 2$ value.

The demand functions will be obtained by substituting parameters values in (3) and (4):

$$\begin{aligned} \bullet \quad \frac{\partial U}{\partial q_1} = 500 - 3q_1 - 2q_2 = p_1 \quad \frac{\partial U}{\partial q_2} = 500 - 3q_2 - 2q_1 = p_2 \\ q_1 = \frac{500 - p_1 - 2q_2}{3} \quad q_2 = \frac{500 - p_2 - 2q_1}{3} \end{aligned}$$

Further substituting quantities in (5) and (6), inverse demand functions are revealed:

$$\begin{aligned} q_1 = \frac{500 - p_1 - 2 \frac{500 - p_2 - 2q_1}{3}}{3} \rightarrow q_1 = 100 - 0.6p_1 + 0.4p_2 \\ q_2 = \frac{500 - p_2 - 2 \frac{500 - p_1 - 2q_2}{3}}{3} \rightarrow q_2 = 100 - 0.6p_2 + 0.4p_1 \end{aligned}$$

Consumer surplus can be determinate as the difference between own utility function and price for purchasing required product quantities, whilst total surplus includes also the producers profits.

A complete situation with all equilibrium scenarios values, is presented in (Table no.2):

Table no. 2 Cournot/Bertrand/Stackelberg equilibrium figures in $b=3$ & $d=2$ scenario

Strategic variable	p_1	p_2	q_1	q_2	π_1	π_2	S_c	S_t
Cournot model	225	225	55	55	9075	9075	15125	33275
Bertrand model	170	170	66	66	7260	7260	21780	36300
Stackelberg model	206.7	217.1	62.9	52.4	9219.0	8231.3	16627.2	34077.6

Source: authors' calculations

The degree of product differentiation can be easily modified, and we consider now a much differentiated products scenario, as $d = 0.5$; proper substitutions led to the follow result:

$$\begin{aligned} \bullet \quad \frac{\partial U}{\partial q_1} = 500 - 3q_1 - 0.5q_2 = p_1 \quad \frac{\partial U}{\partial q_2} = 500 - 3q_2 - 0.5q_1 = p_2 \\ q_1 = \frac{500 - p_1 - 0.5q_2}{3} \quad q_2 = \frac{500 - p_2 - 0.5q_1}{3} \end{aligned}$$

whilst inverse demand functions became:

$$q_1 = \frac{500 - p_1 - 2 \frac{500 - p_2 - 0.5q_1}{3}}{3} \rightarrow q_1 = 62.5 - 0.375p_1 + 0.25p_2$$

$$q_2 = \frac{500 - p_2 - 2 \frac{500 - p_1 - 0.5q_2}{3}}{3} \rightarrow q_2 = 62.5 - 0.375p_2 + 0.25p_1$$

Consumer/total surplus and all other equilibrium values, can be observed in (Table no.3):

Table no. 3 Cournot/Bertrand/Stackelberg equilibrium figures in b=3 & d=0.5 scenario

Strategic variable	p_1	p_2	q_1	q_2	π_1	π_2	S_c	S_t
Cournot	263.1	263.1	67.7	67.7	13746.7	13746.7	16037.9	43531.4
Bertrand	260	260	68.6	68.6	13714.3	13714.3	16457.1	43885.7
Stackelberg	261.7	263.0	68.2	67.7	13747.4	13730.6	16141.7	43619.8

Source: authors' calculations

Finally, we treat a high homogeneity product degree scenario, reflected by a $d = 2.5$ value. Demand function and also his inverse expression will be:

- $$\frac{\partial U}{\partial q_1} = 500 - 3q_1 - 2.5q_2 = p_1 \quad \frac{\partial U}{\partial q_2} = 500 - 3q_2 - 2.5q_1 = p_2$$

$$q_1 = \frac{500 - p_1 - 2.5q_2}{3} \quad q_2 = \frac{500 - p_2 - 2.5q_1}{3}$$

whilst inverse demand functions became:

$$q_1 = \frac{500 - p_1 - 2 \frac{500 - p_2 - 2.5q_1}{3}}{3} \rightarrow q_1 = 125 - 0.75p_1 + 0.5p_2$$

$$q_2 = \frac{500 - p_2 - 2 \frac{500 - p_1 - 2.5q_2}{3}}{3} \rightarrow q_2 = 125 - 0.75p_2 + 0.5p_1$$

All the equilibrium values, can be seen in (Table no.4):

Table no. 4 Cournot/Bertrand/Stackelberg equilibrium figures in b=3 & d=2.5 scenario

Strategic variable	p_1	p_2	q_1	q_2	π_1	π_2	S_c	S_t
Cournot model	215.3	215.3	51.8	51.8	8038.8	8038.8	14737.7	30815.2
Bertrand model	122.9	122.9	68.6	68.6	4310.2	4310.2	25861.2	34481.6
Stackelberg model	188.3	198.1	65.5	46.0	8409.9	6355.8	17160.4	31926.1

Source: authors' calculations

Conclusions

In all three models d parameter reflects the degree of product differentiation.

Lower positive values highlight a very poor substitutability, the equilibrium values approaching to the monopoly solution. Once monopoly scenario triggered (zero d parameter value reached), the connection between firms will be lost, and it will no longer matter which strategy will be chosen.

As the d value increases, getting close to the b parameter value (homogenous products scenario), the results are significantly different. Models based on an output strategy offer a price equilibrium solution, far enough above marginal cost, despite the fact that the profits fall. In an Bertrand game instead, the outcome level approaches marginal cost pricing.

Previous arguments can be easily used in the tentative of making the firms aware of the product differentiation importance, especially in the case of price competition.

Turning our attention over to the Stackelberg sequential model, the paper is trying to explain what exactly happens with the leader's strategical choice when the product differentiation degree changes. In a homogeneous products scenario, the leader decision is to produce an output level matching the monopoly output level. If d parameter start to decrease, the leader will be forced to reduce his produced quantity. As is well known, a small change of product differentiation degree will impact both firms best reply functions. Focusing on the leader, two opposite effects will manifest. Although for any given level of follower's output, the leader wants to produce more, an increase in the rival's produced amount compell the leader to produce less. The latter effect dominates first, but at a certain moment, the former effect must take over, and the produced amount trend will be inversed, rising toward the monopoly level, as d parameter value approaches to zero.

We can further expand by using math principles to also prove the previously reached conclusions. Focusing on this approach, we are highlighting the above simulation figures, their connection with the monotony of equilibrium values functions, induced by d parameter variation. Thus, last results can be rephrased as follows:

- In a simultaneous output competition game (Cournot game), initial scenario ($b=3$ & $d=2$) offer better results than in the products differentiation degree decreasing scenario, but worse than in the poor substitutability one. Equilibrium price, quantity and also profits follow decreasing trends, as the homogeneity degree starts to increase, from the no firm connection case, till the perfect substitutes situation (first order derivates are negatives for all $[0;3]$ interval. Consumer satisfaction is affected in the same way and obviously the aggregate market surplus follows the same trend.

- In the price competition game (Bertrand game), different trends are revealed: prices, profits and aggregate market surplus fall as the degree of product differentiation decreases ($b=3$ & $d=0.5$ scenario offer the best result). The equilibrium quantity „hide” a scenarios mixture, decreasing trend being valid as long as d value keeps lower than 1,5 (the unique critical point). Once over this value, the trend is inversed, a perfect coefficients distribution symmetry being noted in $[0;3]$ interval. Consumer surplus highlight an increasing trend, the total amount they have to pay for purchasing the desired product quantity, lowering as the product homogeneity increase.

- In the sequential Stackelberg game, prices and profits fall as the substitutability degree increases, as well as the follower produced amount level (second scenario – the best whilst third scenario - the worst). The leader's equilibrium output level instead shows a decreasing trend, starting with initial monopoly situation, as d parameter does not exceed 1,78 value; after that, once the increase begins to manifest, the output level bounce back to the monopoly level. Consumer surplus level registers an increasing trend on the entire studied area, but not good enough to modify the aggregate surplus evolution, strongly influenced by the decrease in the producers profits, once the products differentiation degree has started to increase.

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Appendix

$$\begin{aligned}
 a - 2bp_2 - dp_1 - c &= 0 \Rightarrow q_2 = \frac{a-c-dq_1}{2b} \left\{ \begin{aligned} \pi_1 &= aq_1 - bq_1^2 - dq_1 \frac{a-c-dq_1}{2b} - cq_1 \\ 2b\pi_1 &= 2abq_1 - 2b^2q_1^2 - adq_1 + cdq_1 + d^2q_1^2 - 2bcq_1 \Rightarrow \pi_1 \\ &= q_1 \frac{(a-c)(2b-d)}{2b} - \frac{2b^2-d^2}{2b} q_1^2 \end{aligned} \right. \\
 \frac{\partial \pi_1}{\partial q_1} &= 0 \Rightarrow \frac{(a-c)(2b-d)}{2b} - \frac{4b^2-2d^2}{2b} q_1 = 0 \Rightarrow q_1 = \frac{(a-c)(2b-d)}{4b^2-2d^2} \\
 q_2 &= \frac{a-c-d \frac{(a-c)(2b-d)}{4b^2-2d^2}}{2b} = \frac{4ab^2-2ad^2-4b^2c+2cd^2-2abd+2bcd+ad^2-cd^2}{2b(4b^2-2d^2)} \\
 &= \frac{4b^2(a-c)-2bd(a-c)-ad^2+cd^2}{2b(4b^2-2d^2)} \Rightarrow q_2 = \frac{(a-c)[2b(2b-d)-d^2]}{4b^2-2d^2} \\
 p_1 &= a - bq_1 - dq_2 = a - \frac{(a-c)[2b^2(2b+d)-d^2(2b+d)]}{2b(4b^2-2d^2)} = a - \frac{(a-c)(2b+d)}{4b} \\
 p_2 &= a - bq_2 - dq_1 = a - \frac{(a-c)[2b^2(2b+d)-3bd^2]}{4b(2b^2-d^2)} = a - \frac{(a-c)[2b(2b+d)-3d^2]}{4(2b^2-d^2)} \\
 \pi_1 &= (p_1 - c)q_1 = (a-c) \left(1 - \frac{2b+d}{4b} \right) \frac{(a-c)(2b-d)}{4b^2-2d^2} = \frac{(a-c)^2(2b-d)^2}{8b(2b^2-d^2)} \\
 \pi_2 &= (p_2 - c)q_2 = \left\{ a - c - \frac{(a-c)[2b(2b+d)-3d^2]}{4(2b^2-d^2)} \right\} \frac{(a-c)[2b(2b-d)-d^2]}{4b^2-2d^2} = \\
 &= (a-c)^2 \frac{4b^2-2bd-3d^2}{4(2b^2-d^2)} \frac{4b^2-2bd-3d^2}{2b(4b^2-2d^2)} = \frac{(a-c)^2(4b^2-2bd-3d^2)^2}{16b(2b^2-d^2)}
 \end{aligned}$$

MACHINE LEARNING FOR FINANCIAL APPLICATIONS – A MINI-REVIEW

Claudiu Clement¹

¹⁾ University of Alexandru Ioan Cuza, Iasi, Romania

E-mail: office.claudiucllement@gmail.com

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Abstract

There is an increasing interest in utilizing machine learning in financial applications, with an increasing number of researchers contributing to the literature. Considerable amount of research has been published from academics and industry and there has been a constant focus on which is the best tool to be used for specific applications. The momentum of research on this topic does not mean that it is not faced with challenges. This paper, through a mini scoping review of a number of 342 texts published in the year of 2019 on Scopus, aims at providing academics and practitioners with a broad overview picture of the current literature on machine learning applied in finance. The review shows that even though the focus is on the techniques applied in the field of finance, most papers are published in computer science or engineering thematic journals, with economics, econometrics or finance researchers on the fifth place with a mere 4.2% of papers published. Finally, it is concluded that the interest in machine learning for financial applications is undoubtedly continuously increasing with still room for research on the area, being it research or review papers.

Keywords

machine learning, financial applications, finance, scoping review

JEL Classification

C15, C40, C80, G00

Introduction

The financial sector always was an important driver of social well-being and economies are highly dependent on it. It is extremely important that financial institutions function well for the capital accumulation and economic development to happen (Bahrammirzaee, 2010).

With the help of researchers from various domains, machine learning techniques are positively reshaping the financial sector like never before. All applications of machine learning methods in areas such as algorithmic trading, risk assessment, fraud detection, portfolio management, asset pricing and derivatives market, cryptocurrencies and

blockchain, financial sentiment analysis and behavioral finance (Ozbayoglu, Gudelek and Sezer, 2020) have presented an immense amount of interest from researchers.

Moreover, the interest on research is constantly increasing every year. Consequently, a vast amount of methods has emerged in conferences and journals with the goal of either better operationalizing the day-to-day activities of financial institutions or improving the accuracy and effectiveness of their existent models used. Considering the momentum of the information published on the subject, the abundance of information makes it hard for researchers to keep up the pace thus, a need for a brief presentation of the literature is a very valuable tool.

For this study, available papers from Scopus database available for the search keywords *machine learning in finance* were assessed using the scoping review approach. A number of 342 papers were found as published in the year of 2019. Papers were not filtered by their JEL code as the theme of journals publishing the papers is for the interest of this study. Moreover, only papers written in English were selected for review, all including the terms *machine learning* as their leitmotif or treated the theme in respect to the field of finance.

The idea of a scoping review was first introduced by (Arksey and O'Malley, 2005) and it aims at providing an overview of a broad field, in this case finance, rather than giving detailed answers to specific questions (Moher, Stewart and Shekelle, 2015). In this type of research, quality assessment is not conducted. This type of review shares much of the characteristics of systematic literature review, being systematic, transparent and replicable but it does not make practice recommendations. In this case, the goal of this paper is to help in providing ground for a full systematic review. This type of review is relatively new but increasingly common for mapping broad topics (Pham *et al.*, 2014).

Although the literature on machine learning and applications in finance is very abundant in studies, the same thing can not be said about the literature reviews on this topic. There are very few studies summarizing the state of the domain in specific areas such as financial market prediction (Henrique, Sobreiro and Kimura, 2019), banking and risk management (Leo, Sharma and Maddulety, 2019), energy economics (Ghoddusi, Creamer and Rafizadeh, 2019) or financial time series forecasting (Sezer, Gudelek and Ozbayoglu, 2019), moreover specific review studies covering finance in general and not niche topics could not be found.

This mini scoping review aims at understanding what is the current state of the literature of machine learning techniques specifically on finance, by presenting what is the thematic of journals publishing studies on the matter, what are the research affiliations and what type of documents were published. The journal's theme is a debatable subject as more and more cross-domain studies are published and even though the topic of one paper might seem as belonging to a clear identifiable niche, researchers lately publish papers in related topic papers, for example, finance oriented papers being published in computer science journals. The affiliation of researchers is very important for identification of certain hotspots of research, if the case. Also, for an understanding of the type of research developed what type of papers get published constitute an important factor. This being only a mini review paper, no attention has been paid to the methods, data set, feature set, method or performance criteria. An in-extenso paper including the before-mentioned information will be published afterwards.

The rest of the paper will present a short literature review on similar studies, the results found in the analysis followed by summarizing our findings and making suggestions for further research.

2. Literature review

It all started in the sixties, when (Keenoy, 1958) first published his concept of *office automation* and since, there has been an increasing amount of interest in the field of

intelligent techniques used in finance. Given the abundance of information and accessibility restraints the need for summary papers is self-explanatory.

One of the key literature review research paper in the field of intelligent techniques used in finance is (Bahrammirzaee, 2010). The author has done a comparative review of three main artificial intelligence techniques (i.e. artificial neural networks, expert systems and hybrid intelligence systems) and their applications on financial markets. It was proven that the accuracy of intelligent techniques is better than that of classical statistical methods in dealing with financial problems, especially when involving nonlinear data.

Six years earlier, (Zhang and Zhou, 2004) approached the literature from a data mining perspective reviewing techniques such as genetic algorithm, rule-based systems and neural networks and their applications in financial applications. The authors final conclusion was that there were still many unsolved issues and challenges in the context of data mining applications in finance at the time of writing the paper but they also previsioned the great potential of the techniques and their increased adoption on the premises of the knowledge-economy. Also from a data mining perspective, but 9 years after the paper of Zhang and Zhou, (Pulakkazhy and Balan, 2013) provide a new overview over the data mining techniques and procedures and conclude that there is an increasing trend in financial institutions investing in data mining technologies to be more competitive.

Another important review paper on the subject was (Mochón *et al.*, 2008) that summarized the information present in the research area from a soft computing perspective, considering neural networks, fuzzy logic and probabilistic reasoning. Finance being a field where often information is either imprecise, hard-to-be-learned or uncertain, the use of soft computing is instinctive and as the authors proved it provides researchers with great results showing a very promising future as well.

The academic coverage is vast and above there is presented just a small part of it, some of the most representative papers in the area from the perspective of machine learning in finance applications.

3. Findings

In this paper, we reviewed 342 papers published on Scopus in the year of 2019 from various financial application areas. Each paper is analyzed according to its journal of publication topic, document type and affiliation.

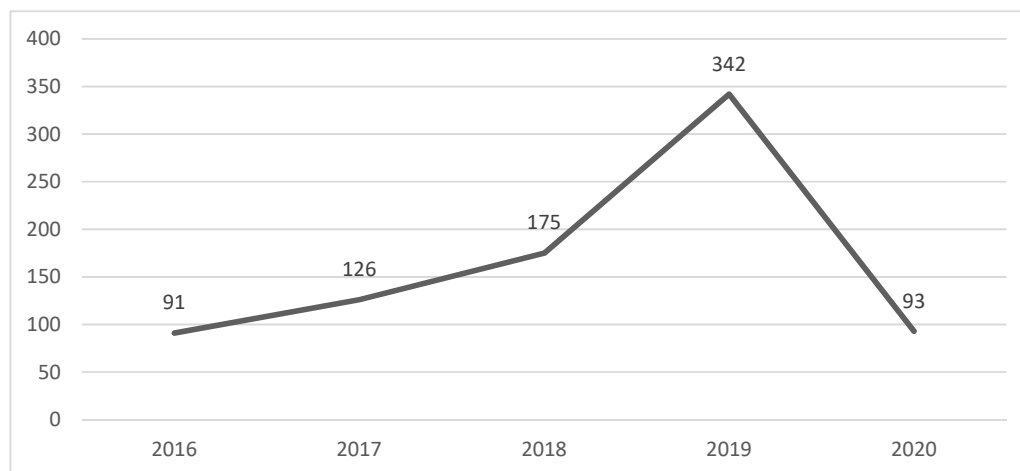


Fig. no. 1 Number of papers published on Scopus yearly

Source: Scopus, registered trademark of ELSEVIER B.V. <http://scopus.com/search>

First and foremost, in (fig. no. 1) the number of papers published in each of the last years and current year is presented. The figure shows us that interest in the domain is abruptly increasing with papers already published in 2020 overcoming the number of papers published in the whole year of 2016. This sustains the idea and need of an in-extenso paper on this subject as the information being published is already becoming overwhelming to be read by academics or professionals. Due to accessibility restraints only Scopus papers have been analyzed but the trend is present on the other databases as well as presented by (Ozbayoglu, Gudelek and Sezer, 2020).

When the papers were clustered by the topic of the journals they were published in (fig. no. 2), we observe the predominant presence of papers published in areas as computer science or engineering detrimental to the science to which its focus is at. This is an interesting indicator of the fact that even though financial industry is adopting more and more machine learning techniques, the researchers that are still interested in their performance or applications are not specifically from financial field. This can constitute a problem on the long run, these applications being multidisciplinary, they need attention from both the beneficiary parts (i.e. financial professionals) and the implementing party (i.e. machine learning researchers).

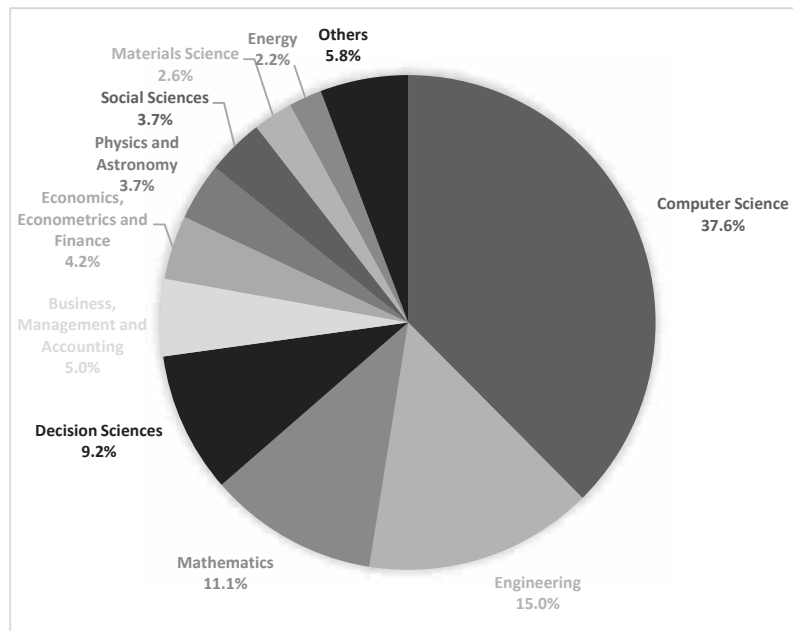


Fig. no. 2 Percentage of papers published on Scopus by subject area

Source: Scopus, registered trademark of ELSEVIER B.V. <http://scopus.com/search>

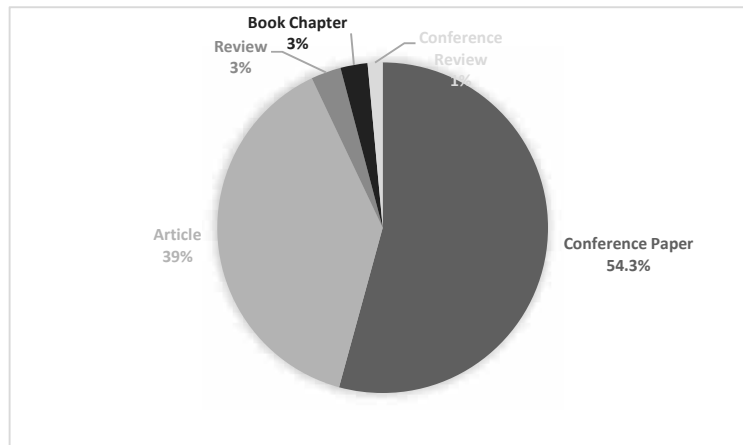


Fig. no. 3 Percentage of papers published on Scopus by type

Source: Scopus, registered trademark of ELSEVIER B.V. <http://scopus.com/search>

In (fig. no. 3) the type of documents of the papers published is presented. It can be observed that the majority of papers were published in conference proceedings. The difference in quality between conference and journal articles has been long debated but there is a threshold identified by (Chen and Konstan, 2010) stating that in case where the conference has an acceptance rate of lower than 30% papers show the same or more citations as journal ones. In the same time (Freyne *et al.*, 2010) argued that the case of computer science papers, which is the case for the majority of our papers selected, papers in leading conferences show an impact in terms of Web of Science citation index, similar to that of mid-level journal papers. Unfortunately in the present case, information about the conferences at which the papers were presented is not available and thus the information should be taken as is.

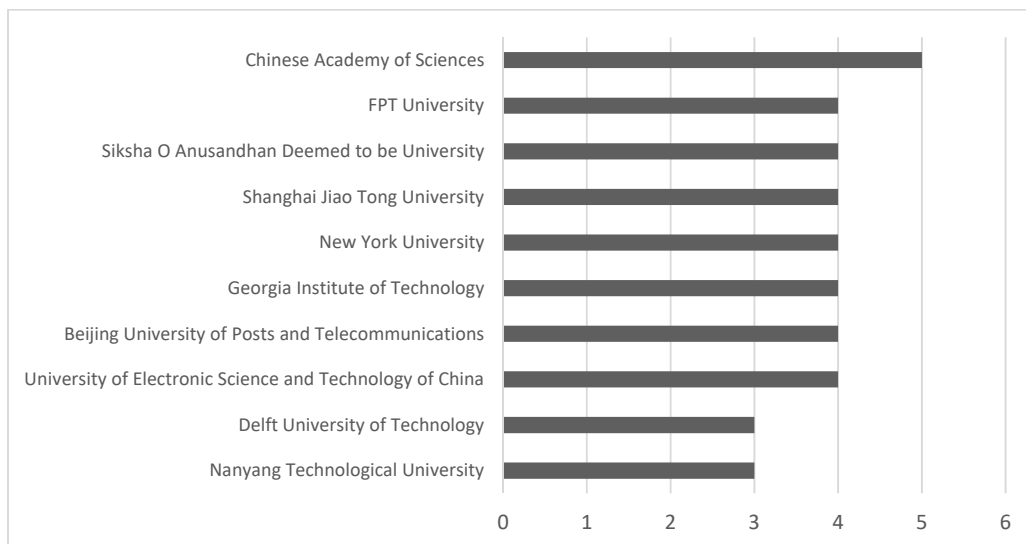


Fig. no. 4 Top 10 authors affiliations

Source: Scopus, registered trademark of ELSEVIER B.V. <http://scopus.com/search>

Meanwhile, in terms of authors affiliation, (fig. no. 4) shows that the highest number of papers come from Chinese Academy of Sciences but with only 5 published out of 342 it can not be considered as a main focal point of research on the matter. In the same time, what can be observed from the analysis of all papers is that there was an important amount of research coming from Asian countries (China, South Korea, Japan).

Conclusions

The interest in utilizing machine learning for financial applications is not a matter of debate anymore. The amount of research papers is increasing every year as showed in (fig. no.1). However, at least in what it concerns the financial sector, it is presented that the most amount of research is coming from papers published in computer sciences or engineering thematic journals, detrimental to finance journals, meaning that for an optimal approach in such a multidisciplinary domain, both parts should equally contribute to the domain and thus help on advancing the domain. This paper proved the need for a more deep-dive systematic review in order to identify if in these papers focal points were algorithms and their bolts and pieces solely or an approach towards better understanding of the applications was conducted as well.

Finally, it is concluded that, even though, the interest is massively increasing there is still room for new research, mostly coming from finance academics.

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THE ANALYSIS OF RURAL COMMUNITIES IN BUCOVINA

Petronela Tudorache¹

¹⁾ National Institute of Research and Development in Tourism; The Bucharest
University of Economic Studies, Romania
E-mail: petronela.tudorache@incdt.ro

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Abstract

The purpose of this paper is to present an analysis of the sustainable development of rural communities with tourism resources from Bucovina, an important region that is known for its culture, traditions and values.

This article is based on research originating in secondary sources and online data provided by the Institute of Statistics, the Ministry of Tourism, the Ministry of Agriculture and similar websites as well as on primary research aimed at 29 mayors of the localities with a high tourism potential in Bucovina.

Herein, we analyse the current state of sustainable development of the region from a natural, ecological, social, economic, and cultural perspective. Consequently, certain examples of good practice and future prospects for developing localities with important tourism resources were identified.

Keywords:

sustainable development, rural communities, tourism resources, Bucovina

JEL Classification:

Q01, R11, P25

Introduction

The rural area holds an important place in the history, civilization and national identity of a country, both by the means of spatial and demographic dimensions and the economic, social, cultural and ecological dimensions. The future of Romania/Bucovina depends greatly on using the rural area development potential on sustainable principles.

The best-known definition of the concept of sustainable development was adopted in 1987 by the United Nations World Commission on Environment and Development (WCED) in the report entitled "Our Common Future" (Brundtland Report): "Sustainable development represents a form of growth that meets the needs of the present without compromising the ability of future generations to meet their own needs."

In the local rural community occur various developments, due to their economic, social and environmental capital (Wilson, 2010). Even so, in case of rural communities with important tourism resources, tourism becomes useful when in need to address future options for sustainable development.

Engelhardt (2005) considers that sustainable tourism could enrich the income and living standards for local people. Tourism could revive local culture, respectively traditional crafts and customs. In addition, tourism can contribute to the increase of the rural economy by creating demand for agricultural products and, through infrastructure development projects, it can administer capital into rural areas.

An interesting approach is emphasized by Weaver (2006), he considers that sustainable tourism implies decrease of negative impacts and intensifying positive impacts of the tourist destination.

According to the World Tourism Organization (UNWTO), sustainable tourism can be defined as: "tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities".

The main goals of sustainable tourism development of a destination are encompassed by: environmental goals, which means preservation of natural resources for tourist purposes, reduction of environmental pollution and degradation caused by tourism; economic goals, which suppose material welfare of host communities; sustainability and optimal usage of tourism infrastructure; social goals which present the opportunities for gainful employment in the tourism sector; recreation opportunities for both visitors and host communities; increased community participation in local tourism policy (Rainey et al., 2003; Niezgoda, 2011).

Rainey et al. (2003) state that it is important for the rural communities to triumph in the global economy, they need to contend with urban areas. Technological advances in communication and transportation have given to the rural communities the potential to overcome the problems of geographic and information isolation.

The concept of sustainability should incorporate economic, socio-cultural and environmental dimensions, according to Chirieleison and Scrucca (2017).

The essential elements which are required to set up a sustainable economy in rural areas that are infrastructure, clean seeds, guidance in crops and livestock production, and credit as well as cooperatives, education, marketing facilities, farm machinery, water supplies, and diverse economic activities, noted Zolfania and Zavadskas (2013).

Research Methodology

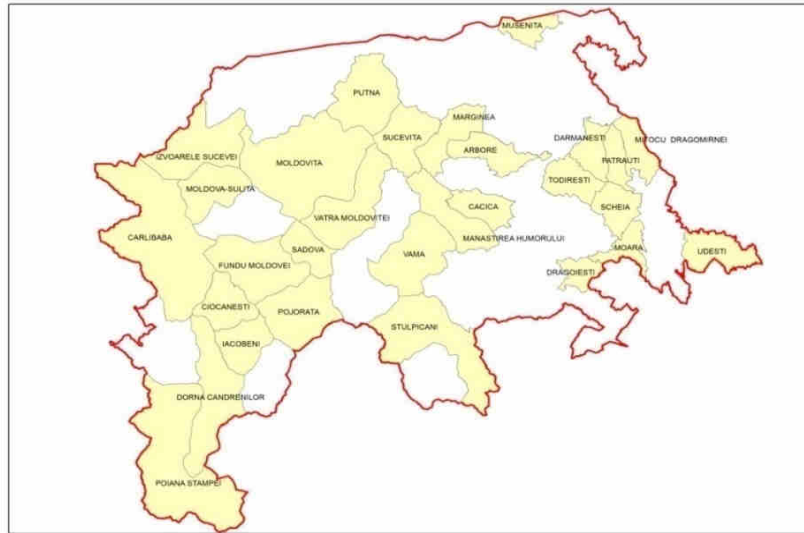
This article will focus on the analysis of the recent developments in terms of sustainable development of the localities with a high rural tourism potential in the southern part of the historical region of Bucovina, respectively the area located on the territory of Romania, covering mainly the Suceava County.

In order to select the rural localities with a high tourism potential in the Bucovina region we referred to the Emergency Government Ordinance no. 142/2008 regarding the approval of the Spatial Planning of the National Territory, Section VIII - Tourism Resources Areas, GEO approved by Law no. 190/2009.

According to normative act, 29 out of the 71 rural localities in Bucovina (40.8%) are considered as administrative and territorial units with natural and anthropic resources of high value (22 localities) and of a very high value (7 localities).

The research methodology included both secondary and primary research sources, the whole analysis being made from four perspectives: a natural-ecological, a socio-human, a cultural, and an economic one.

The questionnaire' included closed-ended questions and open-ended questions. Out of the 32 questions in the questionnaire, the most relevant ones were selected to be analysed in this article.



Source: drawn by the authors, 2018

Socio-Human Perspective

An analysis at the level of each locality reveals the high weights of the young population (aged 0-14) in Pătrăuți (24.9%), Arbore (22.5%), Mitocul Dragomirnei (22.1%); of the elderly population (aged over 65) in Drăgoiești (23.0%), Todirești (21.2%); of the active population (aged 15-64) in Iacobeni (71.8%), Cârlibaba (71.6%), Ciocănești, and Putna (70.0%).

On the contrary, *the weight of young people (aged 0-14 years) is low* in the localities of Iacobeni (10.9%), Fundu Moldovei (11.5%), Ciocănești (11.6%). In this case, the effects could be extremely damaging on the medium and long run, should no measures be taken to boost birth rates and create new jobs.

Localities with low percentages of the elderly population (aged over 65) are: Pătrăuți (8.8%), Marginea (9.0%), Mitocul Dragomirnei (10.8%), Sucevița (11.6%), Cârlibaba (12.4%); and low weights of the active population (aged 15-64) are found in: Drăgoiești (60.8%), Udești (62.0%), and Arbore (62.4%).

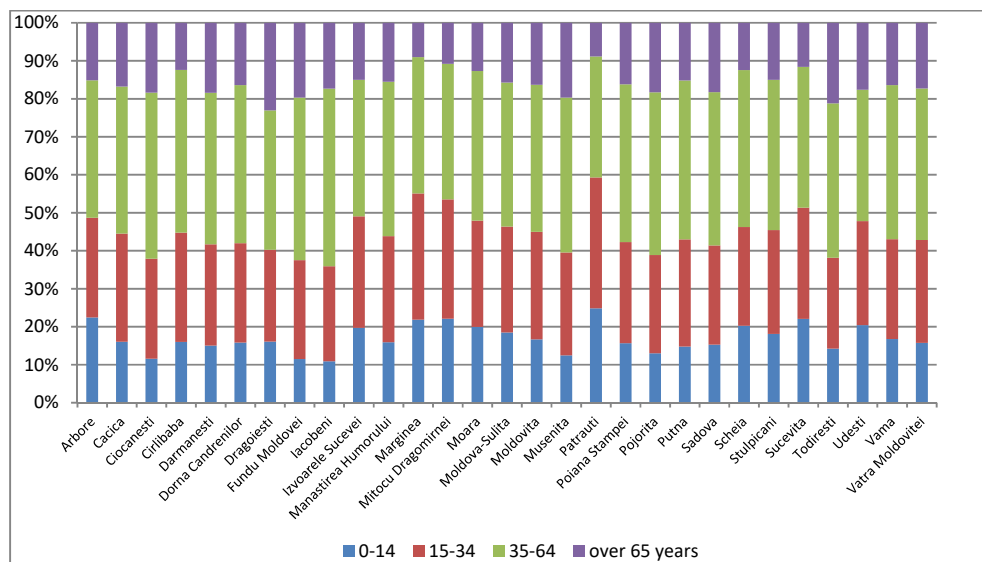


Fig. no. 2 Population structure by age groups, broken down by localities (2018)

Source: done by the authors, NIS, Tempo online database (<http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>)

Natural-Ecological Perspective

This area stands out due to a great variety of land forms, the existence of extensive forest areas, grasslands, slopes, soil resources, an extensive hydrographical network and protected natural areas, all of which have made their mark on the economic development and social aspects of this region. Thus, given the high share of the mountainous and plateau areas, forests cover considerable areas in Bucovina (54.7% in the whole region and 63.5% cumulated in the 29 rural localities with high tourist potential analysed in this study), wood being also an important natural resource in this area.

The main environmental problems identified in the analysed area are floods (in 17 of the 20 localities covered in this questionnaire). The area is one associated with a flood risk on a rather extensive surface in the areas crossed by the Suceava and Moldova rivers, as well as in the piedmont contact area between the Dragomirnei Plateau and Obcina Mare, crossed by the smaller affluent of rivers, especially Suceava (Suceava County Council, 2010).

Water pollution (9 localities), soil pollution (5 localities), landslides (4 localities), large quantities of waste (3 localities), air pollution (one locality) are other problems identified by local government officials.

The existence of mining sites that make no object of greening environmental measures, especially tailings ponds (e.g. Fundu Moldovei), could cause a certain degree of accidental pollution.

In order to prevent and combat environmental problems, several localities have declared that certain projects have been carried out aimed at: embankment / diking of river banks (in 10 localities); waste collection (5 localities); unsilting and regularization of the river beds (in 4 localities); realization of the sewerage network (3 localities); forestation of areas with landslide problems, land stabilization (2 localities); educational and awareness-raising actions aimed at the population (2 localities); realization of the water supply network (1 locality); installing septic tanks (1 locality).

Economic Perspective

The research carried out showed that the economics of the high tourist potential localities in Bucovina have underwent important transformations marked by a transfer of activities from the primary and secondary sectors (agriculture and industry) to the tertiary sector (services). According to the responses from 20 of the 29 analysed localities, it was revealed that the economy of the area is based on wood exploitation and / or wood processing activities (15 localities, representing 75% of the answers received), agriculture - animal breeding and cultivation of the land (12 localities, representing 60% of the answers), commerce (9 localities, representing 45% of the answers), mining - salt (Cacica), peat (Poiana Stampei), stone (Poiana Stampei, Pojorâta), mineral water (Dorna Căndrenilor), food industry (Pojorâta, Arbore - bakery, Dorna Căndrenilor - dairy), services (3 localities - Marginea, Iacobeni, Sucevița), constructions (3 localities - Sucevița, Arbore, Marginea) etc.

Therefore, agriculture and forestry are basic economic activities in the analysed localities. The localities in the mountain area have extensive forested areas. For example in (Fig. no.3), could be observed the localities with the highest percentages: Putna (88.7% of the land fund); Moldovița (79.9%), Cărlibaba (78.4%), Humorului Monastery (76.3%) etc.

Concerning the extent of agricultural land, cumulatively, the 29 analysed localities have a share of 31.9%. The largest agricultural areas are registered in the following localities: Mușenița (91.4%), Dragoiești (88.4%), Moara (77.8%), Șcheia (73.0%), Dărmănești, while Putna (10.3%), Sucevița (13.6%), Moldovița (17.9%), Cărlibaba (18.2%) account for the smallest areas benefiting from agricultural areas.

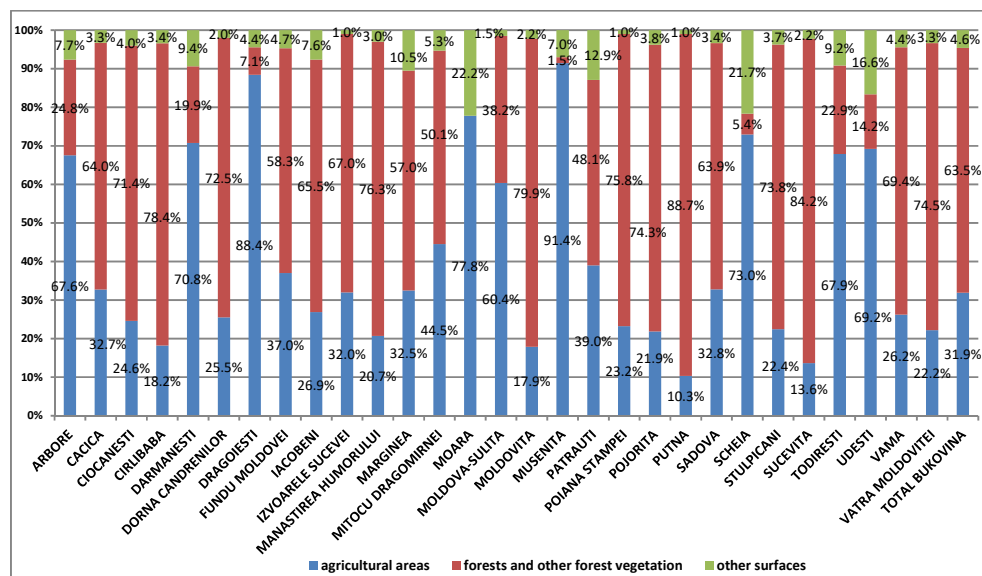


Fig. no. 3 Land fund structure in Bucovina, broken down by locality

Source: made by the authors, NIS, Tempo online database (<http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>)

In the field of industry, it is worth mentioning Șcheia, a village located on the outskirts of Suceava (food industry - beer factory, canned food and meat factory, dairy factory, bakery factory, wood processing industry - furniture factory, mechanical industry - bearing factory, textile industry, extractive industry - sand and gravel mines). In the other localities, industrial activities play a peripheral role - e.g. Poiana Stampei (peat processing) and Iacobeni (non-ferrous ore processing).

As mentioned above, tourism has played an important role over the last 20 years in the sustainable development of this region. Cumulatively, in the 29 analysed localities there are 185 accommodation establishments (representing 40.2% of the total number of this kind of units in Suceava County), with 3,714 bed places (30, 6% of the total Suceava County). As can be seen from the data below (Fig. no.4), between 2001 and 2018, the number of accommodation places increased by 10.9 times, from 340 to 3,714.

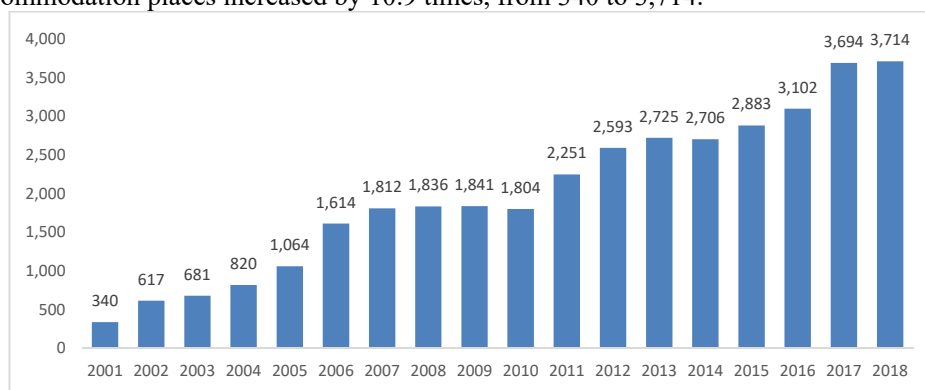


Fig. no. 4 The evolution of the bed places in tourist accommodation units (2001-2018)

Source: made by the authors, NIS, Tempo online database

(<http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>)

Regarding the number of accommodation places for the analysed area, most of them are in Sucevița (23.6%); Vama (12.0%); Șcheia (11.9%); Mănăstirea Humorului (8.8%).

A similar evolution was recorded in the number of tourists. According to (Fig. no.5), their number in rural localities with a high tourist potential in Bucovina grew by 10.9 times between 2001 and 2018, from 9,799 to 106,863, most tourists being registered in localities: Șcheia (22,5%); Sucevița (19.0%); Mănăstirea Humorului (8.0%); Cacica (7.5%).

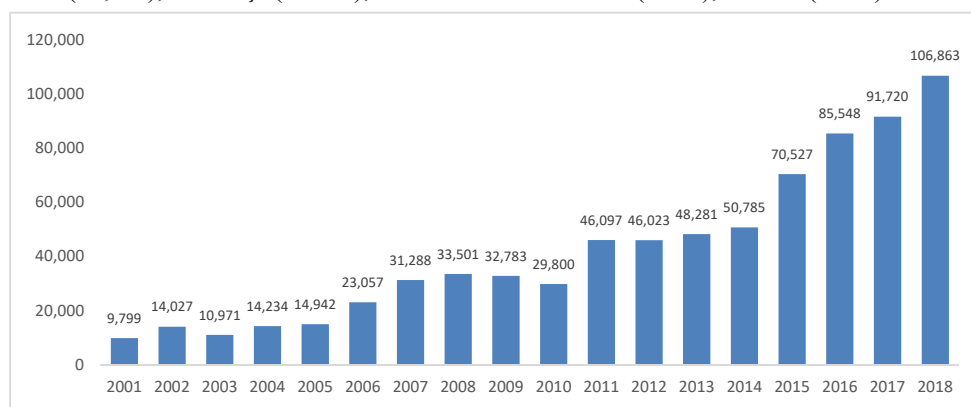


Fig. no. 5 Evolution of the number of tourists in the 29 localities (2001-2018)

Source: done by the authors, NIS, Tempo online database

(<http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>)

Cultural perspective

The area under consideration has a particularly valuable cultural and historical heritage. In the 29 localities with a high tourist potential in Bucovina, there are five monuments registered on the UNESCO World Heritage List (Sucevița, Moldovița, Humor monasteries, Pătrăuți and Arbore churches), 16 other monuments belonging to the category A of historical monuments and 41 monuments enlisted in the B category. In the localities originating in the analysed area, a series of projects / actions for the restoration / consolidation / protection / preservation of the historical monuments, of the cultural objectives or of the representative buildings, were carried out, respectively: * the rehabilitation of the church Luca Arbore (Arbore commune); the rehabilitation of the Roman Catholic Church (Basilica minor) of Cacica (Cacica commune); the rehabilitation Museum-House of the Peasant of Leontina (Ciocănești commune); reinforcement of the church of Sf. Ilie (Șcheia commune) etc.

Moreover, according to the responses received from the mayoralities, several projects / actions have been carried out in the analysed area in support of local artisans. An example is the project called "*Folk Art - A link for tourism development in Bucovina*", financed by the Ministry of Communications and Information Society. Under this project, a tourist circuit was built; it included 10 local artisans, 10 accommodation structures, and 10 travel agencies (2 folk artisans were selected from the Arbore locality).

Conclusions

The existence of certain natural resources initially triggered the development of primary economic activities (agriculture, forestry), in order to develop certain secondary (industrial) economic activities. These resources have also made an important contribution to the development of the tertiary sector, and in particular to that of tourism.

For example, while salt mining was initially made strictly for industrial purposes, salt mines such as Cacica are now also used for tourism purposes. The existence of important mineral water resources favoured the development of packaging activities, but also the development of renowned spa resorts such as Vatra Dornei. The rich forestry fund has contributed to the development of the wood industry, but has also been an important factor in the development of woodworking crafts. In addition, the existence of extensive pasture and meadow areas has favoured agricultural activities such as animal husbandry, but has also contributed to the development of traditional crafts such as weaving and sewing, and, more recently, the development of agro tourism activities.

The valorisation of the tourist potential of rural areas in the Bucovina region creates a viable alternative to the predominant economic activity of the rural inhabitants - agriculture. At the same time, the development of tourism leads to the development of other economic and social areas (transport, craft industry, agro-food industry, various services), thus generating a multiplier effect in the local economy. Consequently, this could contribute in the future to reducing and even stopping the demographic decline.

At the level of this area, some sustainable development initiatives were implemented, both in agriculture (470 agricultural producers and 5 agricultural processors operating at county level were certified in organic farming), in forestry (24 forest units managed by RNP Romsilva implemented the Forest Management System according to the FSC standard) but also in the field of sustainable development of tourism. In this line, it is worth mentioning the eco-tourism project of Țara Dornelor Tourism Association aimed to certify the Țara Dornelor area as an ecotourism destination (concept developed by the Ministry of Tourism).

* Information received from the Mayories of the localities

It is also encouraging to notice that there are some examples of good practice in preserving the local architecture (Ciocanești), a successful model that can contribute to the development of tourism in the locality and can be replicated by other localities in the area, creating the premises for the multiplication of certain positive examples at regional level.

Acknowledgement

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ARE ALL ROMANIAN ENTREPRENEURS ALIKE? FINDINGS FROM THE GEM 2015 SURVEY

Adrian Oțoiu¹

E) *The Bucharest University of Economic Studies, Romania*

E-mail : adrian.otoiu@csie.ase.ro ; otoiu.adrian@gmail.com

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Abstract

Research on entrepreneurship is very diverse, and far from being exhaustive and providing a unified view of entrepreneurs' characteristics and motivations. This also applies to how characteristics of entrepreneurs change based on the stage of their activity (Nascent, Baby and Established businesses), an issue for which there is little research carried out. This paper attempts to provide a comprehensive picture of the characteristics of Romanian entrepreneurs, using the last available (2015 wave) Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS) data. The analysis shows that not all entrepreneurs tend to be predominantly male among Baby business owners, that Established business owners tend to be more frequent, and that household size matters for both Nascent and Established entrepreneurs. Most entrepreneurs tend not to be involved in activities pertaining to the primary sector, and most Baby business owners tend to take a more cautious approach towards adopting new products, venturing into new markets (domestic and international) and business expansion. Some intend to undergo significant expansions, sometimes with the help of new technologies. Results could inform policy making about the characteristics of entrepreneurs at different stages of entrepreneurial activity and help provide support to those which are more vulnerable with respect to their personal characteristics and industries in which they are active.

Keywords

early-stage entrepreneur, entrepreneurial characteristics, Global Entrepreneurship Monitor, logistic regressions

JEL Classification

L26, M13

Introduction

Entrepreneurs have captured the attention of economists as agents of innovation that drive economic progress. Very often, they make business news headlines with stories of initiative,

drive and success, which proves their role is consistent with what economic theorists have said. (Schumpeter, 1904 and 1934, cited by Dumitru and Dumitru, 2018) mentions that understanding entrepreneurs is essential to understand essential elements of economic growth.

While their role and importance in economic development is extremely important, most entrepreneurs are mostly owners of small or medium-sized enterprises (SMEs).

However, in spite of their size, SMEs play a major role in most market-oriented economies, generating a sizable part of the economic output and employ a large share of the workforce. According to the European Commission (2017), Romania SMEs employ two-thirds of the labour force, and generate over half of the GDP.

More recent research shows that, in Romania, SMEs have been adversely impacted by the recent economic crisis, which started in 2008 (Armeanu et al, 2015), exhibiting significant volatility in almost all economic sectors. This, along with a low capacity to innovate, and concentration in low value-added generating sectors, points out to the need to create a favorable business environment for SMEs, which, unlike large companies, have a lower capacity for surviving adverse economic events (Armeanu et al, 2015). To this extent, it is important to have a comprehensive picture of the Romanian SMEs, not only of their overall role and features, but also of their diversity and key differences that define entrepreneurial activities at different stages of their evolution.

Therefore, using one of the most authoritative survey of entrepreneurship data, the Global Entrepreneurship Monitor (GEM), I will attempt to draw a picture of the differences between entrepreneurs at different stages of entrepreneurial activity in Romania, for the first time in literature. Their characteristics and specific features can be useful in designing effective policies that will target their characteristics, overcome their weaknesses, help them survive economic hardship and ensure they can fulfill their dynamic role and foster a sustainable development of Romania's economy.

Literature review

Entrepreneurship has gathered a lot of attention, due to the importance of entrepreneurial spirit and the need to better understand its drivers and characteristics.

In a survey paper, Kerr et al. (2017) shows the current level of knowledge with respect to academic research of entrepreneurship, and identifies the models that describe their personality traits, among which choice of employment, personality traits, effects of policies and approaches to foster entrepreneurship education. They conclude that there is a high degree of heterogeneity, in the conclusions of the studies, in the survey methodologies and in the terminology that defines entrepreneurs.

Case studies for different countries are thus heterogeneous in their findings, too. Among studies that focus on Eastern European Entrepreneurs we note the contributions of Kozubíková et al. (2017). They found, for a sample of Czech SME's, that not age and gender, but the level of education was essential in the management of financial risks. Differences by gender and age were significant in relation with decisiveness, optimism and risk-taking. Using GEM data for 2007-2009, Pete and al (2010) found out that male, employed full-time, without no fears of failure, are more likely to engage in entrepreneurial activities. In a study on US, European and Asian entrepreneurs, van der Zwan et al. (2016), show statistically significant differences among entrepreneurs based on their motivation to start their own operation: opportunity and necessity. The following features were more prevalent of opportunity entrepreneurs: being a male, younger, richer, proactive, and rather optimistic, whereas innovativeness and optimism were more prevalent for necessity entrepreneurs.

An OECD note (OECD, 2018) shows that Romanian entrepreneurs exhibit a higher proportion of youth, older people and women compared to the EU average. However, this

seems to be due to the prevalence of the necessity reasons. They tend to be involved in the following sectors: agriculture, construction and trade. Compared to other EU entrepreneurs, they tend to be more export-oriented, less focused on delivering innovative products (with the exception of entrepreneurs aged 50-64), and more focused on job creation. In a study using 2014 wave of the GEM survey, Dézsi-Benyovszki et al. (2014) reveal characteristics that are prevalent for Romanian entrepreneurs. They show a prevalence of males, middle-aged individuals between 25 and 44, and upper-income tier individuals. Necessity played a high role, although opportunity-driven entrepreneurs prevail. Compared to established entrepreneurs, early-stage entrepreneurs are mostly involved in activities pertaining to the extractive sector, and business services sector, and tend to use the latest technology more often. With respect to job creation, there was no sizable difference, as both established and early-stage entrepreneurs have 1-5 employees. However, the proportion of early-stage entrepreneurs was lower than for those with established businesses. These findings motivated us to draw a profile of Romanian entrepreneurs based on the stage of the entrepreneurial activity.

Research Approach: Questions, Methodology and Data

'Not all entrepreneurs are alike' states the GEM description of Adult Population survey (GEM, n.d.). The existing research has, to some extent, distinguished between different stages of entrepreneurial activity. A distinction is made in GEM between early-stage entrepreneurs and established business owners (Singer et al., 2015) within a conceptual framework which relates the stage of entrepreneurial activity with essential characteristics which help distinguish their traits (Figure 1). Our research will try to distinguish the differences between entrepreneurs at different stages with respect to their characteristics, which will be explained further in the description of the methodology.

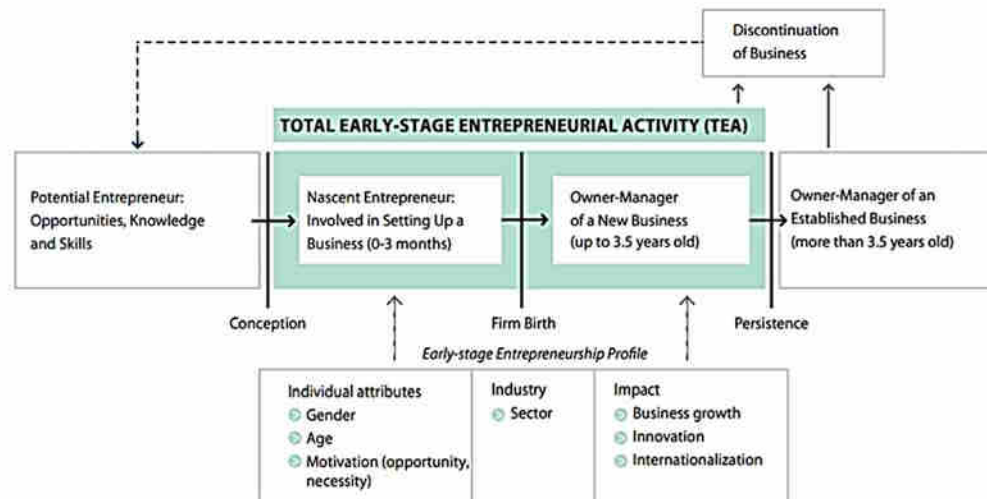


Fig. no.1 GEM Model for business phases and entrepreneurial characteristics

Source: Singer et al., 2015

The research is carried out using logistic regression, similar to the approach of Dumitru and Dumitru (2018), using the glm function in R. The general theoretical model of the logistic regressions employed is:

$$\pi = E(y/m) = \exp(\alpha + \beta X) / [1 + \exp(\alpha + \beta X)] \quad (1)$$

where $E(y/m)$ represents the expected probability of occurrence of a dependent variable, α is the intercept X the matrix of explanatory variables, and β the vector of coefficients of the explanatory variables.

Dependent variables represent the three stages of entrepreneurial activity, with variable names shown in brackets: Nascent entrepreneur (SU), Baby business owner (BB) and Established business owner (ES).

Explanatory variables, except for age were modelled as dummy variables, too. They are:

1) personal characteristics: gender (FEM), modelled as being a woman, age (AGE), motivation for becoming an entrepreneur (opportunity (INCRINC, INDEP), necessity (NECESSITY), or both reasons (MIXED)

2) economic sector (EXTRACTIVE, TRANSFORMING, BUSINESS.SERV, CONSUMER)

3) economic impact with respect to

a) business growth (NO.EXP, SOME.EXP, PROFOUND.EXP, SOME.EXP.NewT)

b) new products and markets (NPM) and

c) international orientation as a percentage of activity (NOINT, INT76_100, INT26_75, INT0_25).

Based on the literature review findings and content of the GEM APS survey, we have also included household size (HHSIZE) as a measure of both family support and sense of responsibility associated with starting and having a business, work status (WORK), modelled as a dummy for persons stating work as their status, as opposed to not working or being a student or retired person, and education level of the owner/manager (POSTSEC and TERTIARY).

Data were available from the GEM website, and included a sample of 2002 respondents, among which owners of managers of small businesses, along with aspiring or former entrepreneurs. The survey was carried out in 2015.

Results

Regression results presented below (Table no. 1) show which of the features chosen to be analyzed are statistically significant.

Results are presented as both exponential coefficients and odds ratios (OR), which are the exponential of the parameters corresponding to the explanatory variables. An odds ratio above 1 is associated with a higher probability that a certain entrepreneur has that specific characteristic, whereas a value below 1 means he/she is less likely to have that feature.

Results show that women are less likely to be owners of both Nascent and Established businesses, and the opposite is true when it comes to size of the household. Nascent entrepreneurs are more likely to be younger, whereas the opposite is true for Established business owners. Baby businesses and established businesses are more likely to have an university degree, and being employed increases the likelihood of being an entrepreneur for everyone. No significant results were obtained with respect to motivation; it appears that all entrepreneurs are a diverse mix, with no reason coming out as more prevalent among all SME types.

Table no. 1 Entrepreneurs' Personal Characteristics

	SU			BB			EB		
	Estimate	OR	Sign.	Estimate	OR	Sign.	Estimate	OR	Sign.
(Intercept)	-1.990	0.137	***	-3.972	0.019	***	-6.771	0.001	***
FEM	-0.403	0.668	**	-0.298	0.743		-0.324	0.723	.
AGE	-0.012	0.988	*	-0.008	0.992		0.032	1.032	***
POSTSEC	-0.095	0.909		-0.951	0.386		0.305	1.357	
TERTIARY	0.061	1.063		0.370	1.448	.	0.628	1.874	***
HHSIZE	0.077	1.080	.	0.041	1.042		0.150	1.161	**
WORK	1.073	2.923	***	1.512	4.535	***	2.626	13.820	***
McFadden R ²	0.212			0.053			0.104		
INCRINC	19.064	2E+08		26.871	5E+11		28.086	2E+12	
INDEPEND	18.708	1E+08		26.919	5E+11		28.159	2E+12	
MIXED	19.000	2E+08		26.913	5E+11		28.130	2E+12	
NECESSITY	19.076	2E+08		26.899	5E+11		28.164	2E+12	
McFadden R ²	-			-			-		

Source: author's calculations. Significance levels *** $p < 0.001$, ** $p < 0.01$, * $p < 0.5$, . < 0.1
 McFadden R² not reported for unreliable estimations.

Table no. 2 Entrepreneurs' Industry

	SU			BB			EB		
	Estimate	OR	Sign.	Estimate	OR	Sign.	Estimate	OR	Sign.
(Intercept)	1.341	3.824	***	-0.274	0.761		26.570	3E+11	
EXTRACTIVE	-3.108	0.045	***	-6.295	0.002	***	-53.130	8E-24	
TRANSFORMING	0.364	1.438		0.347	1.415		0.000	1	
BUSINESS.SERV.	0.576	1.778		0.076	1.079		0.000	1	
CONSUMER	1.198	3.313	.	0.243	1.276		0.000	1	
McFadden R ²	0.211			0.587			-		

Source: author's calculations. Significance levels: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.5$, . < 0.1
 McFadden R² not reported for unreliable estimations.

Compared to other findings (OECD, 2018), it appears that, in 2015 Nascent and Baby businesses were less likely to operate in the 'extractive sector' which consists mostly of agriculture activities (Table no 2). Nascent businesses were also about three times more likely to operate in consumer-oriented businesses. While data was available, no reliable estimates could be obtained for Established businesses.

The impact of entrepreneurial activity (Table no 3), shows marked differences between Nascent and Baby businesses. Whereas the former attempts to tackle new products and markets, the latter is less likely to do so. The same goes, in general, with respect to international orientation, which is stronger for Nascent businesses, and least strong for Baby Businesses. With respect to expansion plans, Nascent businesses are the least likely to make no changes, whereas Baby businesses are most likely to do so. Baby businesses are twice as likely as Nascent businesses to make expansions with new technology, whereas most Nascent businesses are likely to expand without the use of technology. No reliable results were obtained, however, for Established businesses, suggesting that no significant

differences were found among them on adopting new products, exploring other markets, having expansion intentions and having an international orientation.

Table no. 3 Entrepreneurs' Impact

	SU			BB			EB		
	Estimate	OR	Sign.	Estimate	OR	Sign.	Estimate	OR	Sign.
(Intercept)	-1.64893	0.192	***	-4.76	0.009	***	-5.461	0.004	***
NPM	2.38414	10.85	***	-0.62	0.538	.	23.776	2E+10	
INT76 100	15.24432	4E+06		4.36	78.36	***	25.380	1E+11	
INT26 75	3.36035	28.799	***	4.85	128.29	***	25.685	1E+11	
INT1 25	2.78061	16.129	***	4.65	104.57	***	25.702	1E+11	
INT0	2.9265	18.662	***	5.04	154.41	***	25.799	2E+11	
<i>McFadden R²</i>	0.178			0.473			-		
(INTERCEPT)	-1.72581	0.178	***	-4.4964	0.011	***	-4.055	0.0173	***
NO.EXP	2.98458	19.778	***	4.6956	109.46	***	23.621	2E+10	
SOME.EXP	4.25632	70.55	***						
SOME.EXP.NEWT	3.66203	38.94	***	4.2073	67.175	***	23.621	2E+10	
PROFOUND.EXP	17.3313	3E+07		3.0134	20.356	***	23.621	2E+10	
<i>McFadden R²</i>	0.204			0.457			-		

Source: author's calculations. Significance levels: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.5$, . <0.1
McFadden R² not reported for unreliable estimations.

Conclusions and discussion

The analysis done on different characteristics of business owners, at different stages of entrepreneurial activity, has found some surprising differences, and only partially confirms findings in the existing literature.

Thus, the prevalence of male entrepreneurs does not apply to baby business owners among which women seem to play a more important role. Established entrepreneurs tend to be older, unlike Nascent entrepreneurs, and university-educated owners tend to be more prevalent among Baby business and Established business owners. Household size does matter for Nascent entrepreneurs and, to a significantly greater extent, for established business owners, invalidating the cliché of a young, resourceful individual in quest of fulfilling his/her ambitions.

Among all business owners seem to have been motivated by both opportunity and necessity reasons alike, with no significant differences emerging among them.

Compared to literature findings early-stage entrepreneurs (Nascent and Baby business owners) were less likely to engage in activities in the primary sector, which in Romania, includes agriculture. It seems that Nascent businesses are more likely to engage in consumer-oriented activities, and ready to tackle the challenge of making or selling new products and entering new markets.

The rather stark contrast between Nascent businesses and Baby businesses, with the latter tending to avoid new products and markets, and focus more on the local markets, is rather worrying, and further research is needed to see if this is due to the impact of the economic crisis which ended around 2013. This may be hinted by the fact that, although most Baby businesses foresee no future expansion, many others consider expansion using new technologies to a greater extent than Nascent businesses.

These results can help provide a more nuanced picture of characteristics of entrepreneurs, and shed some light of potential generational transformation among them. It could provide

insights that can inform policy making with respect to different initiatives that support entrepreneurs with respect to increasing their business survival rates and promote those with potential expansionary intentions which lack the means to accomplish them. It also sheds light on the profile of those who succeed in staying in business after 3.5 years, thus highlighting early-stage entrepreneurs with potential vulnerable traits, and pointing out to those with more chances to succeed.

One major drawback of the study is the rather scarce data with respect to established entrepreneurs. Based on results uncovering their personal differences, more research and data availability could be of help in uncovering characteristics of entrepreneur cohorts. This data could also help determine to what extent differences are due to the economic environment they operate, and are the result of either favorable or adverse economic conditions that favored those with certain backgrounds and strategies.

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HOW CSR PROGRAMS AFFECT EMPLOYEES' HAPPINESS. A LITERATURE SURVEY

Alina-Alexandra Gorovei¹

¹⁾ Alexandru Ioan Cuza University, Iași, Romania

E-mail: alina.gorovei@outlook.com

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Abstract

The scientific literature emphasizes the vital role of the employees' happiness in the working environment, and a corporate job creates new challenges for management in terms of the employees' happiness and satisfaction. Motivating and monitoring employees' satisfaction has become an increasingly discussed topic among the human resource department, as well as at the company management level. Not dealing with these factors could lead to a decrease in the employee's happiness and productivity level. Methodologically, a qualitative research was undertaken, resorting to descriptive and exploratory literature review. In this paper I have analyzed the concepts of happiness and job satisfaction in the working environment in connection with the organizations' CSR initiative. The role of CSR on employees is becoming more present in the business world, one of the reasons being that successful companies should attract and retain the best work force. When employees feel that their organization is socially responsible, they experience a greater sense of identity with the business they work for. In fact, social responsibility can be more important than financial success in determining how much employees identify with their workplace. Companies who maintain a level of CSR keep a more loyal fan base, save money, and the bottom line is that every business may turn to this to see an increase in profits. While many CSR studies focus on its benefits for the environment, another major responsibility is to create a positive office culture for the internal office environment.

Keywords

CSR, happiness, employee, job satisfaction.

JEL Classification

I31, M14, M10

Introduction

Our path in life starts as follows: we are little and we want to “grow up”, become independent and achieve things that we can be proud of. Inevitably we do grow up, possibly sooner than

we expected, and perfect ourselves daily in order to excel in the field of work. We set off with the idea of happiness which will be lost somewhere along the way and the image of a happy self is mistaken for a well-paid job (Tenney and Gard, 2017).

What does CSR have to do with happy employees? Why do we analyze the happiness felt at the work place? Why do we care about this and why do we continue to study it? And the answer is obvious: because a happy employee can generate performance. Happiness in the workplace involves not only a positive feeling, a state of well-being, but also a determining factor in the success of a project. Academic literature has had a long history in researching for employee job satisfaction: according to Locke (Locke, 1983), job satisfaction is a pleasant or positive emotional state that results from the evaluation of work experiences or jobs. Spector (Locke, 1983) adds that employee satisfaction is now a common concern among companies. Because this emotional state is a key factor in an employee's life, job satisfaction is a stimulating topic for study.

Since we have talked about happiness, it is now necessary to give a definition of happiness in relation to the workplace, but from a psychological point of view: psychologists define the concept of happiness at work as a combination of employee values and company values (Locke, 1983). Some jobs are unpleasant, and others are just great, but most are somewhere in the middle, in that line that separates good from evil. We are looking for happiness at work, and if at the end of a working day we do not leave the office with a smile on our face and we end up leaving sadder than we were when we came, it is normal that after a while we will turn out to be looking for our happiness in another workspace.

It is understandable that we cannot talk about a company without actually talking about the most precious resource: the people who populate it. Employees are the source that actually make the magic happen in any company in terms of achieving results and performance. Obviously, there is a direct relationship between employees satisfaction and company performance. In recent years, corporate social responsibility has become an increasingly central issue in the private sector, the authorities and society. The public appreciates well-done campaigns, they notice those that seem false, just as they notice brands that do not pursue social responsibility campaigns.

The relationship between employees' job satisfaction and CSR events

To find out exactly what makes employees happy at work and how CSR can solve the problems that arise, it is a good idea to focus on the employees' fears and on what motivates them to pursue a career at the expense of others.

The first fear under analysis is job insecurity. Research has shown that the trend of restructuring and reducing activity within companies has led to an increase in the perceived job insecurity. Warrall and Cooper showed in their study that 60% of the national sample of 5,000 British managers have found themselves in restructuring situations in the last 12 months, a restructuring that has had the effect of reducing activity and outsourcing. The consequences of these changes, even at the managerial level, a level which could control events, were the increase of job insecurity, a low morale and the erosion of motivation and loyalty (Worrall and Cooper, 1998). While objective data may suggest that job insecurity should not be a concern for employees, research indicates that this perception has high correlations with the employees' health and well-being, and it has a negative impact on the employment status and well-being of employees (Ferrie et. al., 1998).

The next factor under analysis is the working hours. The increase in the number of hours worked is due, in some countries, to organizational restructuring and a reduction in staff numbers. The reduction in the number of staff has the effect of taking over the activity previously performed by those made redundant by the ones who remained in the organization, which leads to overloading with tasks and the necessity of overtime in order to deal with them (Worrall and Cooper, 1999). Most research in the field indicates that overtime at work is

followed by health problems, such as heart issues, the most common example being myocardial infarction (Sokejima and Kagamimori, 1998). For employees' happiness in relation to working hours, companies should encourage the reduction of overtime and the elimination of the idea that they are an element of organizational commitment.

The degree of control has occupied a central position in the theories of work design and organizational behavior. In the workplace, this concept refers to the degree to which an individual is free to decide how to fulfill the objectives of his/her work. The employees who perceive that they have the opportunity to perform a certain activity as they wish, unlike those who are guided step by step, are intrinsically motivated, and more so, show greater responsibility in performing their tasks and take responsibility for the consequences of their work. High levels of perceived control are associated with increased job satisfaction, organizational commitment, involvement in work, increased professional performance and motivation, while low levels of perceived control are associated with physical symptoms, emotional distress and absenteeism (Spector, 1986).

A last fear that an employee might have has a close connection with his/her satisfaction at work and it is in relation to the managerial style. Increasing pressure on management can have an impact on the well-being of employees. The pressure felt by managers is, intentionally or unintentionally, transmitted to subordinates, managers thus becoming sources of stress for their employees. Managerial support, such as effective communication and feedback, seem to be extremely important factors for the well-being of employees. Reduced or non-existent managerial support is related to increased stress levels (Kirmeyer and Dougherty, 2006).

Happiness is the key

Are we happy at work? This question puzzles some people because they don't really know what to answer and they haven't asked themselves this question yet. The bills are paid, the job is done, do we still have to take anything else into consideration? The literature tells us that low job satisfaction affects the employees' decision to stay in the same company or why not, to leave the job. The decision of employees to leave the job is an individual decision that is usually made in a short time, but if they decide to stay in the company, they might remain loyal to the company for a long time (Tett and Meyer, 1993). For this reason, companies must pay special attention to the employees and increase the job satisfaction. In order to achieve this, in addition to a competitive salary, companies use specialized services to maintain the mood of employees, take care of them, their health, their motivation and their way of looking at the job. The role of CSR campaigns on employees is increasingly present in the business world, one of the many reasons being that for a company to become successful it should attract and retain the best employees (Gazzola, 2014).

In 1985, Tajfel and Turner presented a framework in which they explained the need for individuals to classify themselves and others into social groups. They reveal that the relationship between CSR and employee satisfaction could be explained by the social identity theory. According to this theory, individuals derive a part of their identity from the group or groups they belong to (Tajfel and Turner, 1985). This means that in order to encourage employees to act in a CSR campaign, it is necessary to find those topics of interest for as many people as possible, but also activities or passions that unite people in communities, such as sports, theater or music.

Companies deal with the employees' fears and anxieties through CSR campaigns, meaning that there are CSR campaigns for each society branch. These companies have a larger budget than an individual and also a wider audience, and use this opportunity to draw attention to the causes they believe in and help them. Obviously, this can increase the public's sympathy for that business, and therefore, corporate social responsibility is considered a win-win situation. We notice that if the employees are satisfied and like the company in which they work, they will recommend the respective employer to friends and family (Bhattacharya et. al., 2008).

After reading the specialized literature, we notice the advantages of CSR programs for both employees and employers. For employers, we observed benefits such as reinforced employee engagement with the sponsoring organization, increased morale and productivity, innovation supported by professional and personal development, positive business images, and better relationships with the host communities. For employees, studies have shown that employee volunteer programs could provide a sense of belonging, a stronger attachment to the organizational culture, better self-esteem, and more networking opportunities for meeting new people and making friends.

Other research has shown that the employees who are satisfied with the company and its social responsibility actions demonstrate that they show commitment, involvement and productivity. In fact, when employees are satisfied with the company's CSR actions, productivity increases. We must mention that the social responsibility projects and employee volunteering are some of the most important activities of CSR at the moment. Being part of the CSR's internal activities brings employees respect for the workplace. Therefore, now the company's beliefs are also the employee's beliefs, which leads to a greater trust in the company, and it works more efficiently to achieve the company's objectives. Employee loyalty towards the company leads to the idea of a comfortable work environment, thus increasing the job satisfaction. It is proven that CSR programs have a positive impact on the workforce, and employees working in philanthropic activities feel happier and spread a positive image of the company in society (Suher et. al., 2017).

If a company wants to successfully motivate its employees to achieve its goals, it must make them loyal to it. In other words, loyal employees work more efficiently, which automatically leads to better products and services. As a result, according to studies, CSR practices, especially those implemented outside the company, positively influence employees (Brammer et. al., 2007). It should be noted that CSR not only contributes to the corporate image and reputation of the company but also provides a momentum and helps the company to be evaluated as more attractive, giving potential employees the impression that it is a safe and reliable job. From the point of view of employees, they develop self-esteem and identify themselves with the organization, and as a result, adopt pro-social behavior to increase the social performance of the company (Choi et. al., 2018).

Conclusions

These charitable activities within the company positively affect both the internal and external public offering advantages such as increasing the company's image, financial performance, low costs and employee loyalty. Most importantly, CSR practices create stronger loyalty. This situation makes employees to work harder, which results in higher productivity, but also in a certain state of happiness. CSR contributes positively both to the corporate image and to the communication between the government and the social organizations. Therefore, it is essential for companies to understand this concept well and to focus on the issues related to corporate principles and objectives. Following the analysis of the literature, employees who participate in corporate volunteer programs benefit from strengthening self-esteem, meeting new groups and making friends or feeling happy thanks to these small positive changes in their lives. It should be noted that almost 90% of companies in the United States actively encourage employee volunteering each year (Tuffrey, 1997).

We noticed that CSR actions have an impact both outside and inside the company. Outside, they have an impact on the community and, implicitly, helps to have a better image of it. However, it also contributes to a better perception among customers. On the other hand, internally, it determines a greater involvement of employees by living the company's values and thus contributing to the development of the organizational culture. By creating a good work environment and developing internal marketing strategies, companies can boost productivity and satisfaction among their employees (Stancu , 2011). In conclusion, if CSR

projects are not yet part of a company's strategy, it must make every effort to address it. Otherwise, they will lose the trust of those who are the essential element of their business, because the expectations of employees, customers and the whole community has changed significantly in recent years.

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MAPPING UNCERTAINTY: MACHINE LEARNING TO ACT HUMANLY?

Alexandru Corduneanu¹

¹) "Alexandru Ioan Cuza" University, Iași, România

E-mail: alexandru.corduneanu@student.uaic.ro

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Abstract

The human action has always and ineluctably been subjected to uncertainty. Improving some present condition or aiming some future state of want satisfaction implies a process of imaginative and purposeful reasoning – mapping uncertainty. This market process essentially defines the human entrepreneurial action. Nowadays, the reality is distinguished by the emergence of the new information technologies along with its implications on market functioning. The starting research premises were found in the recent academic discussion stressing the key role of information technology on improving resource efficiency consumption (knowledge included), that is believed to considerably diminish all costs to a point of abundance not of scarcity. Methodologically, the research was conducted through evaluative literature review and deductive reasoning. Seen through the lenses of the Austrian School of Economics, the paper analyzed the significance of entrepreneurial capability on uncertainty dealing in the information-technology-led transformed market process. The utopia of economic abundance or the post-scarcity economy driven by robotization and automation, as some research claim, are remnant of old Hegelian-Marxist ideologies. The final contour of economic development is painted by the endless individual needs, desires or wishes. The human action in searching to reach its ultimate goal is based on resource scarcity. The technological progress reduces scarcity but it also provides opportunities for emerging even more goals or ends. The single way of reaching those aims is by unrestricted market, private property and price mechanism. Thus, scarcity lies at the foundation of economic development, in particular, at human action under uncertainty, in general.

Keywords

Human action, knowledge, entrepreneurship, scarcity, digitalization, machine learning

JEL Classification

D80, L26, O10, O33

Introduction

The human action has always and ineluctably been subjected to uncertainty. In addition, the action manifests itself under limited power and control. The constraints come from the limits of the individual intellect, from the physical nature of the body or from the adversities of the nature and, finally, from scarcity.

These limits have always existed. From scarcity came a ceaselessly endeavor of uneasiness removal. To the extent that human wants and needs are endlessly growing and transforming at a pace far greater than the means at its disposal, one must take action and choose among alternatives. The outcome of the action, being placed in some nearer or more distant future, is intrinsically bounded to uncertainty. These *a priori* truths need no other justification.

Moreover, these simple facts are so deeply rooted in the fabric of human actions that there can be never overlooked. Omitting them it will may make feasible even one of the most unreal kinds of universes, one without suns to light it. Scarcity and uncertainty are defining and shaping all decisions. Thus, they give meaning and sheer light on human action.

That's why, we believe, that if humankind is meant to solve its problems, then the only rational solution is to cope with scarcity and deal with uncertainty. If "one side of the coin" may be called *scarcity*, the other we find it under the name of *uncertainty*. The explanation rests in another simple truth: action always aims at some goals placed in the unknown future for which individuals have subjective expectations.

Economics has always understood these premises and tried to find definite ways to explain them by granting them pivotal roles. Economists have discovered that improving some present condition or aiming some future state of want satisfaction implies is process of imaginative and purposeful reasoning – mapping uncertainty under conditions of scarcity. This market process essentially defines the human entrepreneurial action. Thus, entrepreneurship becomes the driving force of the market process, a fundamental mechanism of economic change. In this line of thought, scholars were concerned with the disappearance of the old way of doing things and the emergence of the new ones, along with the actors, institutions, technologies and organizations that are influenced and are influencing the process of change.

Nowadays, the reality is distinguished by continuous and powerful changing character. The emergence of the new information technologies along with its implications on market functioning are tremendously transforming the economic landscape. Moreover, the ubiquitous fact that machines and humans can now easily communicate and interact was almost inconceivable just few decades ago. Its profound impact on the economic reality could make the difference between prosperity and survival or between survival and insolvency.

A relatively new body of literature has appeared emphasizing these technological breakthroughs. Robotics, artificial intelligence or machine learning, to name just a few of them, are now able to respond to unanswered questions better than many humans can. For many, these technological advances represent the key understanding of some optimistic view of a future development of the economy and society.

They raise questions regarding the purposefulness of human action nascent in the individual decisions of the socio-economic actors. By answering these questions predictions were made on the future functioning of the economy, one not based on uncertainty and scarcity, but on abundance, liberation from uncertainty through the socialization of knowledge, arriving at a point they call digital-socialism. Are or will the machines and robots be able to learn and build the knowledge of how to better respond to human wishes and desires, e.g. to build an autonomous system of allocation of economic goods? Will them be capable of thinking for the future, e.g. mapping uncertainty?

The purpose of this paper is, firstly, to identify some aspects concerning the impact of the artificial intelligence emergence phenomenon on the uncertainty handling ability into a scarcity driven world that can be explained using the lenses of the Austrian's School of Economics. Secondly, the paper aims to approach the digital transformation of the economic

landscape as driven by the catallactic entrepreneurial function. The starting research premises were found in the recent academic discussion stressing the key role of information technology on improving the resource efficiency consumption (knowledge included), that is believed to considerably diminish all costs to a point of abundance not of scarcity.

Entrepreneurship - a key concept of Austrian Economics

It is not in our intention to supply a comprehensive analysis on the economic history of thought regarding entrepreneurship. We only intend, eclectically, to draw some few lines around the concept, emphasizing its Austrian 'pedigree'.

The current scientific understanding of entrepreneurship is the natural outcome of one long-lasting and complex gnoseological process. However, its essence and limits are not yet definitively marked. Through time, the concept bore so much different significations. It was noticed that the most difficult and enigmatic aspect concerning entrepreneurship remains its definition (Shane and Venkataraman, 2000). The scientific endeavors made to uncover the entrepreneurship enigma (Foss and Klein, 2012) gathered around two main dimensions: one was trying to find out *what entrepreneurship is* and the other tried to discover *what it creates* (Gartner, 1990).

Along these lines, the two perspectives intersected in what literature suggests: sometimes entrepreneurship emphasizes the traits of individuals and sometimes it describes his or her actions (Koppl and Minniti, 2005). However, the diversity of thoughts around the subject never managed to find a unified theoretical paradigm (Acs and Audretsch, 2005).

Mainstream economics, neoclassical in its nature, mainly analyses the decisions made by the economic agents (Huerta de Soto, 2008). This was not in the thoughts of the founders and proponents of the Austrian School of Economics. For them, economics is about human action, a concept far beyond individual decision. Human action embraces the hypothetical process of decision-making and adds it to the context of *ex-ante* known means and expected ends (Kirzner, 1973). Further, the *Austrians* are more concerned with the pattern of the process that ends with decision-making, creating along the way a network of individual interactions, finally coordinating the plans of all economic actors (Hayek, 1945).

It could be argued that the essence of the message sent by the Austrian Economics is as following: the economy – a complex structure of production coordinated by entrepreneurs through economic calculation on a monetary basis (Topan, 2018). The same message tells us further that economics it is not just a multiplication of one homogenous substance (e.g. value, profit or wealth). The factors of production and the scarce resources are put to use in a continuous process of heterogenous wants satisfaction. It also implies the structure build upon these subjective individual evaluations.

On these premises, the economic process should be understood only in terms of human action, teleology and purposefulness. The outcome is a complex structure of production resulted from entrepreneurial actions and decisions regarding the allocation of scarce resources. The entrepreneurial motivation comes from the correct anticipation of profit and losses. The dynamic of the process comes from within, because it is based on the individualistic understanding of specific market situations. It could never be described in deterministic or mechanistic (*Verstehen*) terms (Mises, 1921). It is rather speculative and founded on alertness, the creation or the discovery of opportunities in an uncertain future. A future that is shaped by the *judgmental entrepreneurial decisions* (Foss and Klein, 2012) animating the entire economic landscape.

In a context defined by uncertainty, as anticipated by Carl Menger his *Principles of Economics* (Menger, 1871), the entrepreneurial gains could be regarded as outcomes of individual decision-making under condition of foreseeable (risks) and unforeseeable future. Entrepreneurial judgement clearly delineates risks from uncertainty, because only the risks can and will be objectively measured (Knight, 1921). Uncertainty has a non-measurable

character considering the unpredictability of the market forces due to the subjective evaluations of billions of consumers.

On this premises lays the central tenets of the entrepreneurial function in the market process seen through the lenses of Austrian Economics. The net departure from the neoclassical economic paradigm is definitively described taking into account the hypothetical concept of pure and perfect competition. From the Austrian perspective, competition becomes dynamic in nature, being founded on the discovery or the creation of *ad-novo* knowledge and information (Hayek, 1978). The orderly mechanism for the usage of such specific and tacit knowledge is sparked by competition among human ideas in searching for gaining or profit opportunities (Holcombe, 2014). Ultimately, it is this entrepreneurial learning process by which entrepreneurs learn, discover, create and adapt to new knowledge, conditions and opportunities (Harper, 2003).

Entrepreneurial knowledge and Artificial (un)intelligence

The scientific debates around the economic and social impact of the new information technologies highlight the rapid development of the digitalization phenomenon driven by technological innovation involving the artificial intelligence. The literature stresses out its tremendous impact on the process of creation, dissemination, distribution of knowledge and information.

Moreover, it is widely believed that nowadays technical advances could reach its full embodied potential only by the deep understanding and acceptance of its impact. The reason behind this thoughts comes from idea that the discovery and usage of knowledge must embrace the right combination stemming from the economic, technological and social spheres (Morrar, Arman and Mousa, 2017).

In yet another line of thought, the literature suggests that digital technologies powered by artificial intelligence are irreversibly changing the evolution of humanity. It impacts the development of diverse field of human activities an play a growing and increasingly dynamic role in the hole society (Kaczorowska-Spychalska, 2018). By analyzing this evolution in the context of globalization, due to the contribution to its existence and for the dependency of its functioning, some studies are emphasizing the need for widening the access to *useful knowledge* and information (Mokyr, 2005).

Nowadays, many scientists are concerned an study the ubiquitous fact that huge data and information are to be found in the on-line medium (Roblek, Mesko and Krapez, 2016; Li, Hou and Wu, 2017; Wielki, 2017). The widespread availability of information, any time and place, creates impressive opportunities for billions of individuals to gather and purposefully use the knowledge. This aspect is hardly measurable, due to its intangible form, but is tremendously affecting and generating value (Brynjolfsson and McAfee, 2011).

In the digital era information systems, machine learning and machine-to-machine communication, Internet of Things or Cyber-physical systems are now uniting the ‘virtuality’ with reality (Xu, Xu and Li, 2018; Liu and Xu, 2017). Research on this field shows that humanity in on the verge of the Fourth Industrial Revolution, upon which the information technologies are playing pivotal roles. For example, the literature on business process modelling and management places artificial intelligence, robotics, cloud computing and machine learning at its core. They show how equipment integrating information technologies with cognitive abilities (data analytics, automation an so on) are used to evaluate dynamic and complex factors contributing to production and efficiency (Bi, Xu and Wang, 2014).

From such a perspective, it could be noticed that the relevance of the *information revolution* comes not from the fact that people are now reading previously hardly available knowledge from bigger screens, but from the dramatic fall in the marginal costs of almost instantaneous access to general and specific knowledge. For example, the relative low costs of access to internet browsers grants the opportunity for finding and acting upon useful individual

knowledge. In other words, *tacit knowledge* becomes widely *codified* (Polanyi, 1959), being easily stored, accessed and transmitted. It could be argued that the problem F.A. Hayek identified in finding the most suitable way of knowledge distribution in society has found its answer. Although Hayek's own thought and explanation were about the freedom of price mechanism, nowadays it seems like we could supplement his thinking with the freedom of knowledge diffuse through information technologies.

All tacit knowledge, pragmatic and unique, are vital for the scientific one. In addition, the entrepreneurial actions of every individual are founded on a personal, unique and subjective interpretation of knowledge and information. This is because the motivation of the entrepreneurs is to be placed on the causality relation between individual means and ends that are in correspondence with a subjective world view. The relevant knowledge it is not 'given' and accessed, but on the contrary, it is only found in the minds of every individual who acts entrepreneurial and, thus, contributing to development (economic, technological, social) (Huerta de Soto, 2008).

We find the artificial intelligence concept gathered and studied around the information technologies. People rely more and more exclusively on computation power trying to solve complex social and economic issues. This fact could create the impression that humans are not intelligent enough to solve problems. We argue, by contrast, that a more adequate term will be artificial unintelligence (Broussard, 2018). Artificial 'intelligence' is doing to the best of its abilities and responds to all commands given, but does not have the entrepreneurial abilities of uncertainty mapping or risk-taking ones. In the final analysis, humans act and decide over events and facts. What it is true is the fact that 'artificiality' can help human entrepreneurs make better decisions about scarce resources, manage knowledge and information, and dealing with uncertainty.

The fallacy of digital socialism

Another vain of 'new' knowledge that can be identified in the recent literature is trying to link the digital phenomenon with socialism, decoupling the knowledge and prosperity that entrepreneurial capitalism has brought to humanity from the digital society. Some of the analysis of these studies have their starting premises in well-known concepts like knowledge economy or sharing economy (Peters, 2020). For this writers, information and knowledge, being some other kind of commodities not pertaining to the scarcity argument, can grow indefinitely through shared use. And since the world in our times is more and more about knowledge and information, we are entering the 'post-capitalist era', a sharing economy that arise from the now old capitalism system of production (Mason, 2016).

We are told that the signs are here and we just need to see them. The central argument rest in Marx's *Grundrisse*, namely the 'Fragment on Machines'. The 'Postfordist' production system, due to its autonomy, will prevail and will finally liberate the human condition. The information economy is here and it brings social goods produced with virtually no costs.

In this construct, knowledge is being socialized in an open-source manner. The 'intellectual' becomes 'in common', because there is a big transformation of the participatory media. The creation and sharing of ideas are now widely spreading and, thus, the 'intellectual commons' provides the real revolutionary alternative to the now dominating 'knowledge capitalism'.

They claim is that once information migrates to cloud computing, socialism is on the right and only feasible path to take. While capitalism is based on profit, capital and action, private property, efficiency and exploitation, digital socialism draws its power to overthrow capitalism from social relations, the socialization of knowledge through the openly free exchange of ideas.

In addition, there are those who think that the development of today's economy raise questions on the purposefulness of human action (Mizerak, 2019). The disruption caused by artificial intelligence have impacted labour markets and made it possible for the machines to replace

humans in the process of decision-making. They dream of a society with no inequalities and privileges and that the new technologies and artificial intelligence are capable of making this real (Kurzweil, 2001; Folgieri, 2016).

The utopia of economic abundance or the post-scarcity economy driven by artificial intelligence are new forms of socialist ideologies. The echoes of Marx's and Hegel's writings are to be heard even if history has proved them fallacious. They depict the world as a battleground between diverse ideologies that stem from the social class's divergent interests. The victories and the defeats are consequences of some providential historical intervention. This mythical entity guides humanity in some preordained plan to the final beatitude of socialism. Every step humanity makes to its final destination (socialism) is the outcome of its technological development. Individuals discover the technologies at the right moment, as determined by the *Geist*. Human will and entrepreneurial judgement are being exorcised. They play no role in this very near future of the digitalized socialism. How could individuality and subjectivism survive in a world of equality, eternal peace, abundance and perfect equilibrium?

These fallacies were rightly and finally dismissed by the thinkers of The Austrian School of Economics as being entirely mystical and erroneous. Human entrepreneurial action that gave birth and vitality to capitalism is one proof counterargument. The knowledge embodied in the technological development of the information age is primarily specific and constitutes the object of the market process managed by the consumer's wishes and commands. Knowledge could never be socialized in the way Marxist depict. It is just shared in a globalized market driven by entrepreneurial opportunities, scarcity and uncertainty. Of course, the proponents of this kind of digital transformation, will much be pleased to live in a world with no scarce knowledge. But this utopian world will plunge in decay if its driving force and source of motivation will be held socially. Dispersed knowledge discovery, creation and use makes capitalism harsh, but vivid.

Conclusion

The complexity of the digitalization phenomenon is revealed by its multidimensional impact (economic, social, and technological) on the day-to-day life of individuals. The economists tried to find answers to certain dilemmas in the face of the emergence of artificial intelligence. We find this concept rather, ironically, reversed. The term created the false impression that machines are learning and becoming smarter. We argue, by contrast, that artificial intelligence is not capable of a such humanly task as mapping uncertainty. Nevertheless, many questions remain still unanswered. But there are losing ground when technology, regardless of its complexity, is seen as a simple tool. What humanity knows for the time being is the simple fact that the instruments are not able to reason or decide, yet. Only individuals do. Consumers are those who finally reward the success of the 'smart' machine development process. However, the human action and the entrepreneurial decisions are remaining intrinsically exposed to uncertainty.

The implications on the market process and on the understanding of the entrepreneurial function are based on challenges imposed by a series of changes regarding risk taking decisions under uncertainty, opportunity discovery, innovation process or the access to knowledge and information. The spillover effect of information technology is one of its main futures, thus creating new entrepreneurial opportunities. By adding to this the widening and almost costless access to knowledge and information for a growing number of individuals, regarded as potential users or competitors, then the process of opportunity discovery, constantly guided by alertness and judgmental decision, modifies its complexity and future outcomes.

We showed how the recent development of information technologies can re-spark old fallacious and utopic Marxist ideologies. The teachings of the Austrian's School of

Economics are powerful tools for the ultimate dismantle of such erroneous thinking, especially in our times. The message transmitted is that human action in searching to reach its ultimate goal – satisfying individual needs, desires or wishes, is based on resource scarcity. The technological progress reduces scarcity but also provides opportunities for emerging even more goals or ends. The single way of reaching those aims is by unrestricted market, private property, price mechanism and entrepreneurship. Thus, scarcity lies at the foundation of economic development, in particular, at human action under uncertainty, in general.

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MERGERS AS WAYS OF INCREASING EQUITY FOR SHAREHOLDERS ON THE LONG TERM

Anca-Simona Hromei¹

¹⁾ "Alexandru Ioan Cuza" University, Iași, Romania

E-mail: anca.hromei@yahoo.com

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Abstract

Mergers, as reorganization options, have emerged from the continuing need of companies to adapt to market demands, as well as from the desire to identify the most appropriate solutions for business continuity and capital adequacy, becoming increasingly popular nowadays.

Considering that the reasons most frequently invoked for a merger are achieving synergies and increasing shareholders' value, we considered it appropriate to carry out a long-term analysis of the added value generated by these restructuring transactions. Since the examination of the evolution of a company's value has a higher significance and level of interpretation after a certain period of time once the completion of the merger process and the integration phase, the study was conducted for a period of eight years from the time of the merger.

This paper seeks to analyse whether, in the long term, the well-known relationship " $1+1=3$ ", which describes the merger added value or the generated synergies has applicability at the level of the Romanian economic environment.

For this reason, for each of the 65 Romanian merger cases analysed, the sum of the individual values of the companies' prior the merger was compared with the value recorded by the absorbing company for a period of 7 years after the completion of the merger. It was found that in 77% of the cases the merger had a beneficial impact on the equity value of the participating companies, therefore the capital restructuring by merger can be considered an adequate option.

Keywords

Mergers and acquisitions, long-term synergies, value creation, equity valuation, net asset method

JEL Classification

G34, M40

Introduction

In recent years, at national level, there has been an increase in companies' interest in restructuring and reorganization operations such as mergers and acquisitions. This practice of mergers, particularly discussed and analysed internationally, gradually grew a place on the Romanian market. The media is presenting more and more such transactions, the reasons for their completion being the vertical or horizontal development of business, the increase of equity and of the value returned to the shareholders, or, in some cases, the hope of rescuing those companies found in an impasse.

The majority of studies conducted on the evolution of the companies after the merger operation focused on their short-term results. However, the medium- or long-term effects of these transactions have not been detailed, nor if the objectives stated in the merger projects were actually achieved in the post-merger phase.

Regarding these aspects, Gregorieva and Petrunina (2015) concluded that mergers conducted on emerging markets are value-destroying deals. Also, a recent study conducted by Bianconi and Tan (2019) found that due to the merger process, the firm value can increase in the short-term, but in the medium-term, the company value is expected to decline.

At the level of Romania, it was found that at the end of the merger year, 56% of the cases examined showed an increase in the value of the companies, while in 44% of the cases the decision to merge had a negative impact on the value of the companies, the individual operating mode being a more favourable one. Therefore, the major influence of the mergers on the creation of added value for the shareholders could not be confirmed at the end of the first year after completion of the merger. (Hromei, 2015)

Since we believe that the results obtained after the first year of the merger could have been influenced by factors related to the period of integration of each company's resources and adaptation to the new structure and activity, we decided to conduct our analysis over a longer time horizon considering the results obtained more relevant for identifying a national trend.

Research Methodology

The purpose of this research is to determine, in the long run, the impact the merger has on the value of the companies that have decided to restructure by this method, namely the identification of synergies resulting from the merger process, in term of company value.

A first definition of synergies phenomenon was given by Ansoff, who explained the benefit resulting from the successful completion of a merger operation through the " $2 + 2 = 5$ " formula. This way, he tried to point out that, by continuing the activity through a single entity, two companies can obtain higher values than in the situation when they would have decided to activate individually (Ansoff, 1965).

Over time, Ansoff's formula has been adapted; nowadays the relationship frequently used to define the plus value of the merger is generally " $1 + 1 = 3$ ".

This research seeks to identify the long-term concordance between this formula and the economic reality at the level of the Romanian merger market.

For this purpose, we analysed the evolution over a period of 8 years of the value of the company resulting from the merger, compared to the sum of the individual values registered before the reorganization, for the companies that combined their patrimony, aiming to determine the synergies, respectively the long run generated added value from these transactions.

There are many approaches and valuation methods for merging companies, from simplistic asset-based approaches to the most complex ones like revenue-based, cash-flow, goodwill, and stock indices, each of these methods having advantages and disadvantages depending on the specific of the evaluated companies (Petitt and Ferris, 2013).

International literature and practice consider the income approaches best suited for estimating the value of merging companies, among which more popular are the cash-flow or dividend-

based methods. Also frequently used, the modern methods based on market comparisons are relatively simple to apply and provide a more relevant value for companies, according to the ever-changing economic reality (Shapiro et al., 2013).

Nevertheless, at the level of the Romanian business environment, it was found that the most preferred are the asset-based methods, the most commonly used method being the accounting net asset value (Lazăr and Avram, 2011; Hromei, 2014).

This method takes into account the book value of the company's assets and liabilities, in order to determine the book value of equity, which is considered a global value or net contribution for each of the companies at the moment of the merger (Georgescu et al., 2019).

The Net Asset Valuation Method assumes the determination of a company's value only on the basis of the information presented in the last balance sheet, the owner's equity being determined by reducing the level of total assets with the total debts of the company. Therefore, the net asset value represents the total equity of a company (Poniachek, 2019).

Given the frequency of the valuation method based on the net asset value and the fact that for the sampled companies, this same method was used to determine their value at the time of the merger, we considered it appropriate to maintain the same method when determining the value of the companies for the years following the merger.

The analysed sample consists in all the wholesale and retail companies whose merger projects were published in the Official Gazette of Romania during the year 2011. Both the absorbent and the absorbed companies have their main activities under the section G: wholesale and retail commerce, according to the NACE classification, considering this a better way to observe value evolution if merging companies activate in the same or related field.

The decision on the selection of mergers that took place in 2011 can be explained by the need to access the financial data published for the years following the merger, the time range being, as mentioned above, of 8 years.

Of the 93 merger cases identified, we eliminated those for which the value of the contribution at the time of the merger or the net asset value was not stated and therefore the value at the time of the merger could not be determined, as well as those companies which in the subsequent years after the merger date, either dissolved or ceased to publish their financial statements. In the end resulted a sample of 65 cases of merger by absorption to be studied.

We consider interesting to mention that the total number of companies, which, within the period of 8 years after the completion of the merger ceased to exist, being dissolved and radiated, or their financial information ceased to be published, amounted to 12, these details suggesting a negative influence of the merger on the activity of those respective companies on the long run. However, not knowing other information or factors that could have influenced the dissolution and eradication decision, we consider more important to focus on the evolution of the "surviving" companies that make up the selected sample.

The time horizon observed refers to the period 2011-2018, the results included in the analysis being related to the year of the merger and the next seven years after the completion of the transaction.

In order to achieve the proposed goal, it was considered, in the first stage, the determination of the individual values of the companies, based on the information included in the merger projects, documents which were consulted in the database of the Official Gazette of Romania, part IV.

As above mentioned, the valuation approach was through the Net Asset Valuation Method, one of the arguments being the fact that all the companies included in the sample, used at the time of the merger, this method to determine and present their net contribution in the merger project. Some of the reasons invoked in the mergers projects for opting for this method included the fact that none of the companies were listed at the stock exchange, the difficulty

of making estimation for cash flow assessment, and the accuracy of data from the balance sheet, consistent with the economic reality.

After establishing the individual values, we proceeded to determine the value of the newly created entity, by summing the individual values of the absorbed and absorbent companies.

Taking into account our objective, namely the analysis of the long-term value evolution, the next step was to determine the value of the company resulting from the merger for a period of 7 years after the completion of the merger process. For this, the database of the Ministry of Public Finance was consulted, where the annual financial statements submitted by the economic agents are published, the database query being possible using the unique registration code of each absorbent company. Information regarding the net assets or net equity was collected for the years following the mergers, namely the period 2012-2018.

After collecting the information regarding the total equity or the net asset value for the period under study, we continued with the calculation of the annual growth rate of the value of each of the merged companies included in the sample.

The final step implied the calculation of the average growth rate of the company's value for the period under review, thus determining whether, on average, the merger has led to an increase in the value of companies or to its diminishing.

For each of the companies included in the study, the growth rate of the value from one financial year to another was determined, as well as the average growth rate for the analysed period.

By observing the average growth rate, we were able to identify the number of merger cases for which, in the long term, an increase in the value of the company could be identified, as well as those cases that did not show a favourable evolution after the merger.

Results and Discussions

After completing the above described steps, we proceeded to group and separate those mergers that determined, in the long term, a difference of positive value from those that led to the destruction of the value of the companies, respectively the reduction of the shareholders equity level.

The results of the study suggest that mergers can be directly associated with an increase in the value of the company and, indirectly, with an increase in the benefits to its owners.

Out of the 65 mergers analysed, in 50 of the cases, there was an increase in the value of the company resulting from the merger over the sum of the individual values of the companies that formed the basis for its creation, and in the years following the restructuring. Therefore we can state that intended for 77% of the companies included in the sample, the decision to merge has proved to be beneficial, generating synergies at the level of the shareholders on the long term, and increasing the book value of the equity.

These companies have managed to overcome the difficulties they faced before the merger and at the stage immediately following the completion of the transaction, integrating favourably both their shared assets and their organizational cultures.

Compared to the short-term results, it is noted that a larger number of companies register, in the long term, an increased value, this trend being explained by a better integration of resources in the next financial years. Another reason could be the implementation of a medium and long-term strategy to increase results and benefits, as well as a more efficient activity than in the first year, considered critical and focused, in particular, on adapting to change.

It can be stated, therefore, that at the basis of creating synergies lays the company that absorbs or the absorbent, but there may also be situations where synergies result precisely from the absorbed company, due to the assets or knowledge it has transmitted to the absorber. It is important for the leaders in the field to be able to identify the elements that can add value, as well as to quantify the value of synergies generated. Good integration mechanisms and communication plans implemented after the merger process are the main ways of ensuring

the success of such restructurings. (Baker and Kiymaz, 2011)

Participating in a merger with a partner in the same industry, as it was the case in our study, could lead to a decrease in production and personnel costs and in costs of goods or services previously purchased from outside, all of these benefits being translated by the phrase economies of scale, often referred to as main motivation in merger projects.

However, as can be seen in figure no. 1, there were also some less favourable situations in terms of value recorded by companies after the reorganization by merger. In 15 of the analysed cases, respectively for 23% of the absorbent companies from the sample, in the years following the merger, there were found decreases of value, respectively decreases in the shareholders equity.

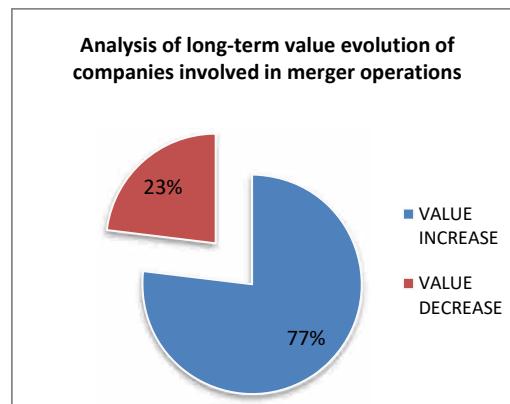


Fig. no. 1 The analysis of long-term value evolution for companies involved in mergers

This phenomenon can be justified by the complexity of an efficient organization of the merger process, the difficulty of making realistic forecasts on the future evolution of the company, establishing the post-merger strategy and activities, so that the initial objectives and the main purpose of the reorganization would be achieved.

The failure of a merger operation is often due to an overestimation of the benefits that could be obtained, as well as to the insufficient information collected about the company being acquired or took over, referring to its resources and its strengths or weaknesses. A faulty initial assessment can lead to a failed transaction.

It should also be pointed out that it is difficult to accurately measure the value added that can be attributed, in the long run, to the merger, since other factors, internal or external, may interfere, as time passes, in the economic and legal activity of any company. These factors might directly alter the company's financial results.

However, if proper planning and close follow-up of all phases and steps during the integration period are taken into account, merger operations can have a real positive influence on businesses previously in difficulty, as well as a significant growth of capital, and of the benefits to their owners.

Conclusions

The results of the study lead to the idea that Romanian mergers succeed, in the long run, to create added value, or to lead to synergies.

When the value of the companies participating in the merger is determined on the basis of the accounting net asset method, namely the book value of equity, a tendency to increase this value in the long-term, respectively in the next 7 years after the transaction was completed, was identified, the majority of the companies included in the study registering increases in value in the period following the completion of the merger process.

This favourable evolution of the value of companies can be translated by an increase in the benefits of shareholders, which is often invoked when deciding to participate in merger restructuring operations.

An analogous analysis would be interesting, but based on company valuation by other methods, since the accounting net asset method is the simplest but also the least adapted to the specifics of each company and field.

Also, the measurement of the value added and of the synergies generated by the Romanian merger operations through modern assessment methods already applied internationally can represent future research directions.

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DIGITAL TRENDS IN AUDIT

Ovidiu Dragoș Tofan¹

¹⁾ “Alexandru Ioan Cuza” University, Iași, Romania

E-mail: dragos.tofan.2014@gmail.com

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Abstract

The digitization of the financial-accounting analysis is a process in progress with new approaches through the implementation of intelligent IT tools. The audit of the economic situations has already taken the step to another level by moving the specific processes in the online area, by eliminating the samples and by continuously monitoring the essential indicators from all levels of an organization. Audit reports have the primary role of reflecting the health of economic mechanisms by processing an extended volume of more or less standardized data; the evolutions of Big Data Analytics, Business Intelligence or Artificial Intelligence systems for economic analysis and reporting already come with practical solutions, but it also brings a series of ethical, adaptability or security dilemmas. The present article aims to analyze the main trends of the intelligent working tools adopted by the audit in the practice of the big cabinets as well as of those manifested in the field of information processing dedicated to the strategic organizational management. The research takes into account the influence of the contextual determinants given by the new institutional regulations and transformations at a global level for the supervision of the statutory audit, as well as the efforts to adapt the specific standards and legislation. The obtained results converge towards the idea of gradual adoption of the techniques of intelligent processing of the financial-accounting data in the conditions of respecting a rigorous discipline meant to confer the main role of the audit, namely, guardian of the correct and verifiable information.

Keywords:

Big Data Analytics, Business Intelligence, financial-accounting analysis, digitization.

JEL Classification

A1, A2

Introduction

From the perspective of financial-accounting analysis, the evolutions of the 21st century information technologies require a realistic approach from the factors involved in terms of maximizing the benefits but also minimizing the specific risks and shortcomings. At the

same time, the efforts of professional auditors to keep up with the digitalization of business processes are useless or with a drastically diminished effect if there are no resettlements of the legal framework as well as a reform of regulatory institutions in this field.

The term "digitization" is broad and covers most sectors of economic activity based on at least two major triggers: globalization and the Internet. Strictly related to the evolutions of the last decades, globalization can be seen as economic integration, exchange of ideas, population and goods (Donnan and Leatherby, 2019) process supported politically - through agreements, negotiations or alliances - or technologically. The Internet primarily ensures the facilitation of information exchange, access to resources and tools for working and processing knowledge. Large volumes of data and information have passed from the physical environment to digital format (electronic registers), stored in servers to which network access is allowed (Kamordzhanova and Selezneva, 2019). It is a simplified explanation of a broad process in which organizations organize their information systems, substantiate management processes and build their work strategies. Today's digital economy includes Big Data technologies, artificial intelligence, cryptocurrency, cloud computing, augmented reality, neuro-technologies, etc. which, transposed in the sphere of financial-accounting processing, lead to unique tools and procedures in the area of storage, processing, access and sharing of knowledge to users interested and authorized in this regard.

The professional auditor is forced to keep up with the pace of digital innovation. As audited clients implement intelligent information technologies to increase business efficiency, to focus on customers, to find new markets and to increase productivity, the auditor must understand the impact of digitalization on the business and apply such technologies in their own work missions (Meuldijk, 2017). Drawing future scenarios with total accuracy is almost impossible, but awareness of innovative technologies, the adoption of digitization in the sphere of own working tools or the resizing of professional training to the new scale of values can create new opportunities for the audit profession.

Innovative trends

The analysis of the literature dedicated to innovative technologies with a direct impact on the audit as well as the reports issued by the audit firms of the Big Four reveals a strong concern regarding the following trends: Data Analytics, Mobility / Smart Digital Hubs, Cognitive technologies / Artificial intelligence and Predictive Analytics.

Data analytics

The term of Data Analytics synthesizes the tools of extraction, validation and rapid analysis of large volumes of data, being applied to complete populations (as a percentage of 100% of transactions). Models are discovered and analyzed, anomalies are identified, useful information is extracted from the data being audited through analysis, modeling and visualization in order to plan or perform an audit (Byrnes et al., 2014). Thus, the use of automated analytical algorithms instead of sample-based testing leads to a clear improvement in the quality of audit processes due to the possibilities related to:

- identifying and assessing the risks associated with accepting or confirming an audit engagement;
- identifying and assessing the risks of material misstatement by analyzing the entity and the environment in which it operates;
- applying substantive analytical procedures in order to assess the auditor's risk of material misstatement;
- identifying and assessing risk of material misstatement of the financial statements due to fraud and testing for fraud in the light of the risks assessed;

- using analytical procedures, towards the end of the audit, in order to formulate the final conclusions regarding the correlation between the financial statements and the auditor's vision of the entity.

In a study conducted by Ernst & Young (2018) on a number of 745 respondents with leadership roles in organizations that have implemented Forensic Data Analytics tools in 19 countries between October and November 2017, the results show an overwhelming percentage in favor of the tools in Spreadsheet category (90%). The sophisticated tools from the RPA or Voice search and analysis category are expected to be adopted in much smaller shares by those interviewed, as can be seen in table no. 1. At the same time, a high percentage is registered by the instruments designed within the beneficiary entities, to the detriment of the solutions marketed by companies specialized in the area of data processing.

Table no. 1. Broader adoption of advanced technologies

Technologies	Percent
Spreadsheet and relational database	90%
Data warehouse	63%
Internally built tools	55%
Visualization and reporting	54%
Continuous monitoring	46%
Security incident and event management	43%
Statistical analysis and data mining	42%
Social media and web monitoring	40%
Forensic analytics	33%
Robotic process automation	14%
Voice searching and analysis	8%

Source: Ernst & Young, 2018. Global Forensic Data Analytics Survey

Important audit firms follow procedures and policies that, in terms of internationally acquired know-how, have adapted to the new Data Analytics challenges. The International Federation of Accountants recognizes current trends and seeks solutions to integrate analytics into audit procedures. The integration of Data Analytics in audit is done at a more conceptual level as the acceptance as audit evidence of the views or reports generated becomes quite difficult, even if they are based on a whole series of algorithms or rules (Ramlukan, 2015). At the time of their design, the standards did not predict the type and volume of data that auditors now face and did not include reports issued by analytics as audit evidence.

Mobility/Smart Digital Hubs

In the classic version, auditors work in an environment with landlines, faxes and desktop computers, being physically connected to an office. Mobile technologies have facilitated the detachment of such facilities and have placed professionals in the field, in a stronger connection with customers and, implicitly, with the required information. Basically, there are so-called "digital hubs" that function as smart platforms where auditors can work remotely and in real time, using data and tools for analysis, automation and visualization. According to a KPMG report - "Audit 2025" from 2018, to be effective, such platforms must have three characteristics (Forbes, 2018):

- have the ability to work in "cloud" storage environments;
- configured with future innovations, currently unavailable but forecast for the coming years;

- relieved of complex and unnecessary tasks for the auditor (loaded already with challenging tasks).

Such a working manner is associated with the notion of “remote auditing” (RA) defined as a process in which auditors combine information technologies with data analytics in order to remotely evaluate and report / formulate opinions on the accuracy of financial statements and efficiency of internal controls (Accorsi, 2011). A number of dilemmas are identified on which the auditor must apply the correct reasoning in accordance with professional ethics and the boundaries set by the specific standards:

- Authorization: ensuring that only authorized parties have access to the execution of certain operational processes;
- Separation of duty (SoD): has the role of reducing the risk of fraud and can take two forms: intra-work court (specified on a single process or court) and inter-court (on several operational phases);
- Binding of duties: the persons involved perform only the tasks outlined;
- Delegation: control over the extension of privileges from one executor to another;
- Conflict of interest: prevention of information leakage to competitors using the same cloud or RA system;
- Four eyes principle: ensures that certain phases or activities of the operational processes are deleted through two people with different roles within the organization.

Cloud computing raises a number of issues related primarily to data security, an aspect of interest for both the auditor and the client entity (Wu and Zhao, 2016). In general, the cloud storage service provider is a third party which can cause a number of challenges such as:

- Internal and external threats to data integrity;
- Motivated by their own interests, cloud service providers do not have an honest attitude towards customers regarding the state of outsourced data (for example, hiding incidents caused by data loss in order to maintain a certain reputation in the profile market);
- False perception that pay-as-you-go is "cheaper" than other IT resources;
- Difficult monitoring, control and analysis of IT costs (especially with infrastructure);
- Expectations regarding the 24/7 availability of IT systems.

Under these conditions, professional auditors must understand which services are best suited to specific work missions and that the implementation of appropriate mobile technologies at the right time is paramount (Chua, 2013).

Cognitive Technologies/Artificial Intelligence

Artificial intelligence (AI) changes the way a business operates and opens up new opportunities for auditing. Eloquent are IBM Watson systems capable of reading, listening to, and processing billions of documents per minute in accordance with accounting standards, such as United States Generally Accepted Accounting Principles (US GAAP), International Financial Reporting Standards (IFRS), Swiss Financial Market Supervisory Authority (FINMA) or the Public Company Accounting Oversight Board (PCAOB). AI can read and interpret the evidence received and even generate electronic audit files as the assertions are checked. In KPMG's view, although the evolution of such tools is uncertain in the near future, AI will influence the conduct of audit missions and, moreover, will be disruptive to the profession itself (Meuldijk, 2017).

In a study conducted in 2019 - "Internal Audit Insights 2019", Deloitte specialists bring recommendations for companies that have already engaged in the adoption of AI / cognitive intelligence tools to improve quality and expand the scope of procedures audit, to adopt a series of measures aimed at developing a clear vision and strategy for the automation of operations.

The reality in practice of companies engaged in the implementation of AI systems shows a growing interest in this field, even if the financial and professional challenges are major.

Thus, in 2018, 74% of a sample of CEOs selected globally by a study by Ernst & Young stated that they have no strategic planning regarding the adoption of such digital tools. A year later, the same study revealed that 73% of those interviewed already implemented AI or planned such investments.

A similar study conducted by World Economic Forum (2020) during the 2nd and 3rd quarters of 2019, applied to 151 respondents from 33 countries demonstrated the degree of adoption of AI tools within companies involved in financial services. The analysis of integrated or in-process components shows the lowest interest in autonomous decision-making compared to other applications:

Table no. 2. Overall state of implementation for selected AI application fields

AI application fields	Implemented	Currently implementing	Not implemented but planning within 2 yrs
Anomaly detection	42%	23%	22%
Natural language processing	39%	20%	23%
Data generation and interpolation	36%	25%	25%
Computer vision	36%	22%	20%
Time series forecasting	35%	30%	25%
Data de-noising	33%	20%	26%
Clustering	31%	29%	27%
Autonomous decision-making	27%	23%	28%

Source: World Economic Forum, 2020. *Transforming Paradigms - A Global AI in Financial Services*

Given that companies are investing in AI systems, there is a growing need to regulate the use of such tools. Thus, a bill proposed by the US state of Washington in 2019 calls into question the control over how the human factor influences algorithm-based decisions (including whether they are final, questionable or reversible), whether decisions are for or against groups, or individuals, as well as control over data management, storage and security. At the same time, auditors will have to face their own professional reasoning with at least two major challenges posed by cognitive technologies:

- Trust - is induced by the lack of sufficient explanations on how AI systems work, which can disrupt the development of investment programs; thus, the lowest percentage of the above study on the adoption of Autonomous decision-making components is explained.

- Technological limitations - if in closed environments, the capabilities of algorithms have reached impressive levels, in the real world (open environments) there are still many challenges; moreover, the application of meta-learning (patterns, procedures) in completely different environments still has many shortcomings (Wang et al., 2018).

Beyond the professional skepticism, that is required in the area of financial accounting analysis, and the technological and financial challenges, AI opens, indisputably, a series of opportunities for auditing mainly by automating routine and repetitive operations, replacing the human factor with software-based entities, increasing the efficiency and effectiveness of the services provided.

Predictive analytics

This perspective in the performance of audit work is a result of the technologies presented above but which requires an increased attention as it can provide a real chance for the audit to regain reliability in substantiating organizational strategies on a medium / long term. Specifically, advanced data analysis technologies are involved to build predictive scenarios

by extracting the necessary information from an organization's system, processed by data analytics tools in order to identify models that align or not with anticipated trends. This gives deep insights on the client's business and financial risks.

Auditors access the client's data which they combine with those obtained from the market or the economic sector / industry in which he operates in order to obtain a complete picture of the state of business and the risks to which it is exposed, to indicate the probabilities of obtaining potential results. The processing is also fed with historical data of both the analyzed company and other similar entities or in comparable circumstances as well as other external data that are permanently analyzed (from various websites, databases, analyzes, studies, forecasts etc.). The information volume obtained is collected in the auditor's modeling software thus reaching a level of knowledge about the client's business that conducts to competent and substantiated opinions (Herron, 2018). It is a simplified presentation on a complex analytical process already used in audit firms that allows warning indicators to be obtained before the end of financial year.

The auditor becomes a permanent reliable partner of the client organization by having the role of "guardian" of the business with the help of predictive analytics tools; predictive auditing is outlined as an extension beyond traditional working tools and even continuous auditing. Real-time or frequent monitoring of an organization's transactions is completed by a generating predictive scenarios system able to warn over significant anomalies or deviations found in large data sets. The major challenge for the audit, beyond the regulated framework or the procedures for accessing the beneficiary's data, is given by the degree of structuring of the processed data and their support - physical or electronic (Kuenkaikaew and Vasarhely, 2013). The table no. 3 provides a comparison of the audit approaches discussed, with a focus on key aspects of the working missions:

Table no. 3. Audit approach

Area/Audit	Traditional audit	Continuous audit	Predictive audit
Control approach	Detective (Backward)	Ongoing	Preventive (Forward)
Objective	Support audit opinion on financial statements	Real time monitoring on financial indicators, transactions, accounts	Support beyond financial purposes; include but not limited to operational audit, compliance and control monitoring
Audit area	Financial statements at an account balance level	Financial indicators, accounts, sub-accounts, inventories	High risk areas in financial statements and operation processes at transaction levels
Frequency	Periodic	Continuous or close to the event or frequent	Continuous or close to the event or frequent
Measurement	Static	Static&Dynamic	Dynamic
Method	Manual (documents, confirmations, inventory accounts, statistics etc.) Automated(CAAT's)	Mainly automated (ERP, CRM, BI, CAAT's, Data mining, AI, Data Analytics etc.)	Automated (ERP, CRM, BI, CAAT's, Data mining, AI, Data Analytics etc.)

Source: Own projection on table available at: Kuenkaikaew, S. and Vasarhely, M.A., 2013. The Predictive Audit Framework. The International Journal of Digital Accounting Research, 13, p.37-71.

The reliability of the results provided by predictive tools depends very much on the quality of involved historical data. New and unforeseen events can create invalid results if not filtered properly. Human prejudices make their mark on the data sets chosen for processing, thus limiting the correctness of the scenarios generated. Although the potential of analytical systems is high, its models are limited, in addition to human understanding and judgment, by numerous other factors, including data storage and retrieval, processing power, algorithmic modeling hypotheses (Dickey et al., 2019).

On institutional level, the reactions to the proliferation of described digital tools are not long in coming. Thus, a working group was set up within IFAC - Data Analytics Working Group (DAWG) that is focused on monitoring ongoing developments in the efficient and appropriate use of technologies, including data analysis, in order to improve audit quality; Within the same framework of the IAASB, the Technology Working Group (TWG) operates to assist professional auditors in understanding how automation tools and technologies can affect, during the audit engagement, audit documentation in accordance with audit standards - ISA 230. Thus, through documentation developed in April 2020, suggested procedures are detailed so as not to violate specific regulations by adopting intelligent data analysis tools and the reports generated by them (IAASB, Technology - Audit Documentation, April 2020).

Conclusions

With digital tools for intelligent data processing, the future for auditing is getting closer. The article captured recent evolutions of financial-accounting Data Analytics, and also "convulsions" captured on the institutional level responsible for regulating this field. Worldwide representative audit firms make sustained efforts to raise awareness of the factors involved (agencies, client companies, professionals) over the proliferation of smart digital technologies through various studies, research or reports and by adopting sophisticated audit tools.

Inevitably, the audit moves from traditional "post-mortem" methods of analyzing annual financial statements to real-time monitoring of transactions and the construction of key predictive scenarios for organizations. Professional opinions are formulated in real time and keep pace with the dynamics of new economic realities.

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THE PARTICULAR CASE OF THE KIRZNERIAN ENTREPRENEUR. A FOCUS ON THE INTERNATIONAL MARKET

Anca Elena Lungu¹

¹Alexandru Ioan Cuza University of Iasi, Romania

E-mail: ancalungu01@gmail.com

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Abstract

Israel Kirzner built a particular model of entrepreneur. He is an alert individual, a discoverer of entrepreneurial opportunities, who does not need capital for running an entrepreneurial activity. According to him, the worst case scenario for this type of entrepreneur is related to the inability of discovering profit-generating opportunities. Because of this approach, he was criticized for limitations and omissions such as: the exclusion of innovation, action in an environment with predetermined variables, etc.

The aim of this article is to bring to the foreground a different approach to the particular image of the entrepreneur in the economic literature. Starting from this, we intend to use logical-deductive reasoning to develop a scenario in which the entrepreneur does not need to invest capital in order to operate on the international market. Furthermore, we will propose some arguments to help integrate the Kirznerian entrepreneur in a generic portrait.

One of the main contributions made by this research is the devising of a different approach to the Kirznerian entrepreneur, for the purpose of integrating the latter into the international market mechanism. In this context, we thought it relevant to carry out a literature review, as well as an extrapolation of the information therein.

Keywords

Kirzner, Entrepreneurship, Entrepreneur, International market.

JEL Classification

B25, L20

Introduction

The heterogeneity of opinions on the image of the entrepreneur in the specialty literature highlights to a good extent the impossibility of quantifying the individual activity and framing it in specific templates/standards. Starting from this premise, we acknowledge and identify in the literature a series of directions with regards to the topic at hand (*the entrepreneur*) and we intend to take a closer look at the highly disputed image of the entrepreneur as built by Israel

Kirzner. In the context of an ambitious long-term goal, that set out to create a comprehensive portrait of the entrepreneur, this article discusses the particular case of the Kirznerian entrepreneur. By analysing the defining characteristics and features thereof, the author produces a scenario that justifies the activity of this individual (the Kirznerian entrepreneur), starting from the information provided by the literature.

Israel Kirzner's distinctive entrepreneurial construct appears to be substantiated on antithetic tenets, such as market equilibrium and dynamics. The pure entrepreneur is a speculator, an arbitrator that does not possess capital and that generally does not innovate, but rather discovers, without assuming the risks and uncertainty pertaining to the market. The novelty of the Kirznerian entrepreneur draws attention by means of its distancing from uncertainty, and the possibility to discover opportunities that they exploit without losing capital (which is not necessary for the entrepreneur). This surprising concept can illustrate and explain the practice of trades that occur on the financial market.

By extrapolating the information we have, we set out to outline the image of the Kirznerian entrepreneur and (in a subsequent paper) we intend to integrate it in the complexity of the Austrian entrepreneur. Demonstrating its affiliation with this vision confirms the complementarity of different, yet clustering and overlapping types of entrepreneurs within the marketplace.

Literature review

The complexity and uniqueness of the portrait Israel Kirzner outlines for the entrepreneur resides in the mixing and matching of features that can be found here and there in the writings of economists such as Joseph Schumpeter, Ludwig von Mises, and Friedrich von Hayek, as well as in the introduction of features that were less highlighted up to that point (for instance, the inter-temporal dimension of the entrepreneurial activity). In order to illustrate how the Kirznerian entrepreneur acts, we plan to synthesize the primary elements that highlight its features.

Kirzner operates with a novel concept, never before seen in the literature to that date: *pure entrepreneur* (Kirzner, 1973). This label designates an individual that identifies or discovers profit generating entrepreneurial opportunities. What helps this actor achieve their profit-making goal is a unique trait, namely *entrepreneurial alertness*. Guided by knowledge towards the identification of entrepreneurial opportunities that were untapped up to that moment (Topan, 2013, p.110), the Kirznerian entrepreneur is a *discoverer*. In building his case for the pure entrepreneurial act, Kirzner works with an individual that is constantly on the lookout for identifying the existing opportunities on some market. The entrepreneur's role is to harness the discrepancies between current market prices, and this can only be achieved by possessing superior knowledge (Kirzner, 1973, p.27).

Although the Kirznerian entrepreneur does resemble the Schumpeterian entrepreneur in certain aspects, there are also many distinctive elements. Of these, we would highlight the manner in which the two individuals see *innovation* and *the innovating process*. While Schumpeter's entrepreneur is guided by a *creative destruction* that allows for constant innovation, Kirzner's entrepreneur neither creates, nor innovates, and instead just discovers as a result of the knowledge they possess. Kirzner thus creates a random individual without heroic abilities. However, he does possess the *entrepreneurial alertness* (Kirzner, 1973, p.39) that allows him to make decisions concerning the entrepreneurial activity by harnessing the existing opportunities. Although Kirzner believes entrepreneurship is possible without innovation, his concept also allows for a situation in which the entrepreneur has to resort to innovation: *innovative activity*. Innovation entails creating a new *output*, a new method, etc., creating an opportunity that did not exist up to that point, requiring both creativity and imagination from the stakeholder. Going from the idea of inter-temporality, it supports the existence of exceptional situations where merely introducing an innovation does not suffice

unless one also takes into consideration the price discrepancy at different times, which could take the form of speculation (Kirzner, 1985, p.85).

In Kirzner's vision, the entrepreneur must not carry out any specific activity that entails risk-taking (Kirzner, 1973, pp.78-79). In other words, the only entrepreneurial errors result from incorrectly identifying certain opportunities that were not capitalized to the full extent of their capacity. The profit of the pure entrepreneur, for this is the type of entrepreneur Kirzner operates with, is the result of a superior capacity to identify and tap into market opportunities, without entailing the assuming of any risk or uncertainty. Allowing for this vision, the failure of this entrepreneur cannot be clearly defined, as it may be associated with the failure to discover opportunities. The manner in which the Kirznerian entrepreneur could lose is a dilemma. Regarding this latter aspect, the remark of both Rothbard and Foss & Klein is eloquent: the entrepreneur is a *curious, phantasmal formulation*, which apparently risks nothing in its activity (Rothbard, 1985, pp. 282-283; Foss and Klein, 2012, p. 54). Offering no information on how opportunities can be harnessed to make a profit, Foss and Klein are entitled to state that the entire process that Kirzner proposes is nothing but *black box (identification itself is a black box)* (Foss and Klein, 2012, p. 70).

Kirzner treats the issue concerning the holding of capital for the purpose of conducting the entrepreneurial activity in a manner that is similar to the one advanced by Schumpeter. Neither requires available capital for the entrepreneurial act and implicitly for the purpose of making a profit. While Schumpeter seems more lenient in allowing situations in which the entrepreneur could also be the holder of the capital, although the latter is not necessary (Schumpeter, 1939), Kirzner, in his work titled *Competition and Entrepreneurship*, states loud and clear that an individual can undertake an entrepreneurial activity geared towards making a profit without holding any capital (Kirzner, 1973, p. 19), excluding from his analysis all the entrepreneurs that might also be the holders of the capital to be invested (*Robbinsian entrepreneur*). Therefore, the entrepreneurial decisions are defining for individuals that effectively possess nothing (in terms of capital) (Kirzner, 1997).

Kirzner discusses about the competition that Hayek labels as being a *discovery process* (Hayek, 2002; Hayek, 2014), and profit comes as a result of a foresight capacity well above the average of other individuals in the marketplace (*superior foresight*). The critics of Kirzner's theory state that the mere identification of opportunities does not suffice to make a profit; in order to benefit from profits, entrepreneurs should identify earning opportunities and, on top of that, to also invest (Foss and Klein, 2012). Kirzner correlates the opportunity discovery process with Hayek's dynamic world, thus developing a perspective according to which the market process is a permanently entrepreneurial one, a process of discovering opportunities that are unidentified and untapped up to that point. The coordination of entrepreneurial plans is the only chance for *pure profit*, where the latter element is in no way connected to the ownership right over the capital. In his view, the profit opportunities derive from variations in prices, quantities and quality; these variables do not remain in a state of equilibrium. In other words, entrepreneurship is the act of understanding and the response to profit opportunities existing in an imperfect world, considering a marketplace in a permanent state of disequilibrium that cannot be stopped and, moreover, the entire marketplace scenario cannot be approached systematically, but rather conversely solely based on vigilance and entrepreneurial impulse (Kirzner, 1985, p. 11).

Referring to his own entrepreneurial construct, Kirzner states impersonally that it is engaged in acts of entrepreneurial arbitrage, without requiring that it be a creator or innovator (Kirzner, 2009, p.147), as is the case with the Schumpeterian entrepreneur. Kirzner's entrepreneur finds sellers from whom they can purchase cheaper, as well as buyers to whom they can sell the same product for a higher price. However, this scene introduces a novel element that changes, to a certain extent, how one looks at things: *time* (Kirzner, 1973, p. 41). The inter-temporal dimension of the entrepreneurial activity is clearly defined here, although the scenario thus

built could be a genuine disaster, considering the equilibrium state based on which the entrepreneur operates. Counting on the conduct of the entrepreneurial act without holding capital, he draws attention to the fact that the profit belongs to the entrepreneur, not at all to the owner of the capital. In other words, the profit origin in the partial knowledge of the marketplace, and this is impossible to omit in the business activity.

Irrespective of the type of entrepreneurial activity, we cannot disregard the fact that knowledge, alertness and motivation are necessary for making a profit. Rothbard criticized the Kirznerian portrait for adopting the Walrasian equilibrium, as well as for its mistake of seeing resources as an unchanging factor (Rothbard, 1985, pp. 285-286). Under such conditions, technological innovation alone could have been seen as the sole driving force of the economy.

By building and developing a case for a pure entrepreneurial act, Kirzner creates an economic actor in a permanent state of vigilance (*entrepreneurial alertness*) for the purpose of identifying the opportunities already existing on a certain marketplace. It allows for a state of market equilibrium, although this approach to reality in the market would not justify the existence of imperfections that would ultimately give the entrepreneur the possibility to act, even for the mere purpose of discovering and tapping into opportunities.

Methodology

As the entrepreneur devised by Israel Kirzner is a particular case in the economic literature, by means of this research undertaking we set out to integrate it in a general context regarding the conduct of entrepreneurial activity in its complexity. Thus, this approach is intended to be different from the existing ones in the specialty literature.

The first phase of the research process entails carrying out a systematic and integrative review of the specialty literature in order to identify the Kirznerian outlook on the entrepreneur and the latter's activity. Then, building on the totality of data we identified and that Kirzner used, by means of logic and deductive reasoning, we devised a scenario in which the entrepreneur is not required to own capital in order to operate on the international market. This was one of the main critiques to Kirzner's writings on entrepreneurs.

The image of the Kirznerian entrepreneur was integrated in the generic portrait of the entrepreneur based on the research and development of arguments existing in the literature. Identifying Kirzner's contribution aimed to create a comprehensive picture of the existing entrepreneur on the competitive market.

Results and Discussions

The complexity of the entrepreneurial activity is the result of a composite aggregate with intertwining elements, and treating them as units *per se* calls on the other ones, as they are indissolubly connected. Organically part of the same process, their operation can be endangered by eliminating or omitting other elements of the ecosystem. *Isolation* or separation is not a solution that can provide justifications concerning the entrepreneurial activity. As they are part of the same entrepreneurial loop, each of them acts multi-directionally, impacting and being impacted by the improper treatment of the other component parts.

In the economic development process, the entrepreneur should be deemed a respondent to opportunities, not a creator thereof. The entrepreneur identifies opportunities that could generate profits, while constantly seeking market equilibrium (unlike the Schumpeterian entrepreneur). In general, the Kirznerian entrepreneurial activity does not involve innovation, and there are two categories of entrepreneurial activities in this direction: *arbitrage* and *speculation* (Kirzner, 1985). For the entrepreneur, arbitrage entails neither a pre-existing capital stock, nor risk-taking via action carried out simultaneously over different marketplaces. The speculative activity has an inter-temporal characteristic, being based on the

flair of entrepreneurs thinking they managed to identify price differentials between the present and future moment.

The fracture in logic appears when – analysing the entrepreneurial act without prior capital – we try to pinpoint how entrepreneur acts on the marketplace in order to obtain the benefit they desire, irrespective of whether it is an intrinsic one or a financial compensation-type profit.

In the attempt to allow for the hypothesis according to which the economic actor can carry out entrepreneurial activities without also being the owner of a certain capital, one cannot ignore a series of fair questions this approach raises:

(1) Firstly, *is there a situation in which the availability of a capital stock is not a sine qua non condition in the conduct of the entrepreneurial act?* If the answer is affirmative, then *what is this situation in the reality of the market corresponding to Kirzner's perspective?*

(2) Secondly, *if we allow for this context, what are the instruments used by entrepreneurs without capital?*

(3) Last, but not least, *can we accept such a scenario in the reality of the free market where the actor-entrepreneurs' activity is guided by the principle of competitiveness?*

As the questions have already been asked, the next step is to identify several directions that could serve as answer lines capable to support – even for particular cases – the hypothesis argued along the Schumpeter-Kirzner line. Starting from this premise, we can conclude as follows:

(1) Admitting (with difficulty) the optionality of capital in the conduct of entrepreneurial activities, we can have a look at the activity on the financial market. Although we cannot fully support Kirzner's hypothesis, we could be permissive (yet sceptical) in accepting it, for instance, under conditions where the entrepreneurial activity is carried out on the *secondary financial market*. However, creating this type of scenario does not suffice, and it requires a series of conditions that have to be met simultaneously in order to partially validate the opinion under analysis.

By means of spot or fixed-term operations, the entrepreneurs that are (this time) putting on the speculator hat could make a profit without having any capital under the conditions of a hypothetical situation we imagine could materialize as follows: there are at least two transactions (one purchase and one sale transaction), of which at least one is a fixed-term transaction. To go on with the proposed reasoning, another mandatory requirement to be validated is the collection of the equivalent value of the sale contract before the due date of the purchase agreement. In other words, these individuals will be buyers that do not pay the equivalent value of the contract until the time when they collect the amounts due from the equivalent value of the agreement where they act in the capacity as sellers. Although this entails a very high risk, these individuals could have an ace up their sleeve owing to the price differential.

In the case of arbitrage, which entails purchasing an item at a lower price and selling it on another marketplace at a higher price, the same hypothesis could be admitted under the conditions in which the payment for the first transaction could be made only after collecting the equivalent value of the contract for the second transaction. What this scenario omits (through no fault of ours) is the uncertain market context. Disproving this hypothesis could be an easy feat and, in our opinion, correctly justified if we allow for uncertainty in the context. Nevertheless, as mentioned at the beginning of this research endeavour, we admit the particularity of the entrepreneur created by Kirzner and we will treat it as such.

(2) Fixed-term contracts could be an instrument that would allow Schumpeterian or Kirznerian entrepreneurs to make a profit without holding any investment capital. However, in order to allow for this scenario, we cannot disregard an element having a crucial role in the conduct of the entrepreneurial act: *knowledge*. If we accept the hypothesis that knowledge is, in fact, another form of capital that entrepreneurs use to make a profit, the scenario devised along the Kirzner line looks less and less credible. Ultimately, we believe that every individual

has certain knowledge, but the difference is in their ability to harness such knowledge. If entrepreneurs do not have the specific knowledge to help them identify certain niches in the market process, whether this refers to creation and innovation or the discovery of already existing opportunities, the entire hypothesis can be (once again) vehemently disproved.

(3) Whether or not we can accept such a scenario as being valid in the reality of a free market subject to ongoing competition is for each individual interested in this issue to decide for themselves. However, we cannot be convinced by the validity of this orientation so long as questions still remain on the failure of an entrepreneur that had no capital to invest. For us, the main question that remains unanswered is: *What happens if the entrepreneur's initial estimates or economic calculations were wrong? Who takes the loss if the entrepreneur that does not hold any capital makes a decision that is unable to deliver positive values of the estimated results?*

In connection with commercial trades, Kirzner's entrepreneur concept can be very useful for explaining the very practice of *spot* market trades, fixed-term transactions on the stock exchange market. Moreover, this could also serve to explain earnings from commerce. Given our aim to identify the particularities of the Kirznerian entrepreneur and, moreover, our subsequent attempt to integrate it in a general portrait, we find it necessary to make a few comments:

(1) The Kirznerian concept is a partial one, and this statement is supported logically. If we admit that opportunities already exist, it is evident that there was *someone* that created them, and this entity/force can be illustrated by the image of an innovator, of a visionary.

(2) The vision of entrepreneurship as an opportunity discovery process entails *decision-making*. Accepting the market's tendency towards equilibrium, Kirzner took the concept of general equilibrium for granted or as a criterion of truth, but this excludes the entrepreneurial activity. The market process and competitiveness as discovery draw attention to the dynamic character of the market, not at all focused on equilibrium. The state of equilibrium must somehow be used in any construct as a state of the economy, precisely in order to notice what happens over the course of changes.

(3) Entrepreneurship as discovery of opportunities and the approach to entrepreneurship as a *judgemental decision-making process* refers to an abstract function that, let us say, concurs to the progress or exit from the perpetual rotation of an economy (*evenly rotating economy*).

(4) Taking the Kirznerian construct literally, entrepreneurship resides in identifying and taking opportunities. In principle, Kirzner does not exclude the mental pattern or the thought process of the entrepreneur, and this attitude contributes to adopting a vision according to which a possibility also exists to create opportunities.

(5) The activity it conducts is *inter-temporal*, and this could be synonymous in our opinion with risk-taking, although Kirzner does not seem to touch on this matter.

(6) The knowledge that the Kirznerian entrepreneur possesses can be assimilated to capital, and this goes against the postulated hypothesis.

Complementarity could be the keyword forming the backbone for creating a comprehensive portrait of the entrepreneur. All the visions on this major market actor are complementary and form a whole. In the spirit of the liberal and Austrian tradition, a concept of *entrepreneurship* and *entrepreneur* comprises the Kirznerian entrepreneur, as well as the ones devised by Rothbard, Knight, Mises, Hayek, etc.

Conclusions

The equilibrium situation does not allow for *surprise*, unpredictability and, implicitly, for innovation. The latter generates the creation of new entrepreneurial opportunities, and we believe this is where we should once again draw attention to the incomplete picture provided

by Kirzner, an image that does not correspond to the reality of the market, although he set out in his endeavour by taking the concept of Misesian origin, but framed in a different context. Competition as a discovery process as found in Hayek and the use of knowledge dispersed asymmetrically in individuals were the background for outlining the concept of an entrepreneur that does not need capital to be used in the entrepreneurial act. The vision of entrepreneurship as discovery of opportunities and the approach to entrepreneurship as judgemental decision-making are, in our opinion, complementary. Activities are carried out inter-temporally, and this approach is nevertheless risky and uncertain.

In conclusion, reconsidering our position towards the pure entrepreneur proposed by Israel Kirzner to a certain extent, we accept his concept as a partial one, yet one that we can use in the process of creating a comprehensive picture of the entrepreneur. Although it comprises conflicting elements, the Kirznerian entrepreneur does illustrate, to a great extent, a series of activities specific of the international market, which allows us to achieve our initial goal, namely to integrate it in the general portrait of the entrepreneur.

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COMPARING E-LEARNING PLATFORMS FROM THE PERSPECTIVE OF FACILITATING ACTIVE AND COLLABORATIVE LEARNING

Ioana Andreea Bogoslov¹ and Radu Mircea Georgescu²

¹Lucian Blaga University of Sibiu

²Alexandru Ioan Cuza University of Iasi

E-mail: andreea.bogoslov@ulbsibiu.ro; E-mail: mirceag@uaic.ro

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Abstract

The last decade of research on how to create and manage efficient educational processes indicates significant improvements. The shift from traditional learning to learner-centered education has led to the implementation of various learning environments supported with strong online functionalities.

Therefore, at present, the E-Learning systems at individual level, not just at the generation level, tend to be increasingly complex, integrating multiple facilities such as audio and video content distribution, live streaming, chat, exercises and tests, discussion forums, integration with other platforms and so on. The intense development of E-Learning platforms makes it difficult to differentiate between them, often the possibilities offered to the users being almost similar. In addition, the existence of a large number of E-Learning systems determines the difficulty in dividing them taking into account well-defined criteria.

The present paper aims to expose the results obtained by performing a comparative analysis between some of the most popular platforms that are created and primarily used for educational purposes, from the perspective of facilitating active and collaborative learning. From a methodological point of view, the analysis in this case is based both on qualitative research, necessary in order to provide a better understanding on the addressed subject, as well as on the direct observation on the reality, in an attempt to obtain significant information following the comparative analysis performed.

Keywords

E-Learning Platforms, E-Learning Comparison, E-Learning Solutions, Collaborative Learning

JEL Classification

D83, Q55, L86, O3

Introduction

The continuous evolution of computer technology has influenced many spheres of activity therefore today the use of digital tools has become a familiar activity to many of us. The development experienced by the Information and Communications Technology (ICT) field has led to the reorganization of many domains or to the change of the activities undertaken within them, also affecting the educational processes. Hence, the traditional teaching and learning approaches have benefited from significant transformations, the digital progress encouraging the creation of educational environments supported by complex technological infrastructures.

Over time, many concepts have been used in order to define the educational processes carried out with or through digital tools. However, at present, as a result of the undeniable progress of the Web and the increased possibilities in terms of connectivity, the specific terminology often refers to the E-Learning concept. In fact, in many cases, E-Learning is similar to Computer-Assisted Instruction, but implies the existence of internet connection.

E-Learning systems have benefited from a chronological development, concurrent to the progress of the Web and the ICT field as a whole. Individually treated, the E-Learning solutions developed over time came in the form of platforms or systems, gradually offering increasingly complex facilities.

Collaborative learning has been recognized as being more effective than individual learning, offering many benefits such as enhancing the motivation of participants in educational processes and significantly contributing to positive outcomes (Slavin, 1995; Johnson, et al., 2000; Snowman, et al., 2009). From this specific reason, multiple E-Learning systems have been designed and implemented aiming specifically to support active and collaborative learning. Currently, the most widely used E-Learning systems encourage learner-centered approach and function based on the idea that participants in the learning processes are directly involved in it, through collaboration with others. Therefore, the student plays the most important role, being both in the position acquiring/developing knowledge, but also being responsible for distributing and development of knowledge of other people.

Nowadays, the options for E-Learning systems are extremely diverse, including those aimed at supporting active and collaborative learning. The natural question thus arises: *How can we choose the right platform from the available platforms?* The increased number of such software products, but also the multiple and often almost similar facilities offered by them hampers the process related to their differentiation. Therefore, when it comes to using an existing E-Learning system we may face a real and hard challenge in terms of choice.

The main purpose of this paper is to make a comparative analysis among some of the most used and recommended E-Learning platforms in terms of facilities offered that support active and collaborative learning. In order to identify the platforms under analysis, a first filtering was performed based on well-known categories of distance learning solutions with online functionalities, which proved that Learning Management Systems (LMS) best serve the purpose of our analysis. The second stage consisted in choosing some of the most popular LMS following criteria that would facilitate the analysis by direct testing, such as the multilingual character of the platform. The results of the study provide an overview of the analyzed LMS, which can facilitate the choice process when targeting active and collaborative learning. At the same time, the proposed framework of reference can serve as a starting point in achieving a more extensive benchmarking model, taking into account other perspectives or criteria.

Category Selection

When a comparative evaluation of elements that are part of a large conglomerate is desired, one of the initial steps of the analysis process consists in identifying the elements that are significant for it. In the present situation, the elements are represented by the platforms with

online functionalities that can serve educational purposes. However, the current multitude of such platforms determine the difficulty with respect to the selection process. Hence, identifying some categories through which the analyzed elements can be distinguished becomes almost imperative.

In the present section, the interest is attributed to the choice of a representative category for online educational solutions that are **(1) created and used primarily for educational purposes, (2) encourage collaboration between participants in educational processes (both instructors and learners) and active learning, and (3) have a high degree of complexity.** Thus, given the fact that the ICT field is dominated by rapid progress, we consider that outdated solutions or offering limited facilities have a low degree of significance for the analysis in question, as there is an increased risk that they will be removed from the market in the future.

Defining a generally accepted typology regarding E-Learning platforms can be considered an almost impossible task. We justify our statement by the fact that each new platform or new E-Learning system lays the foundations of its own learning model, offering new facilities and opportunities for users. In addition, there are currently many software products that can be used for educational purposes, but these were not created directly or solely for this purpose. Thinking about the previous mentioned aspects, we can affirm that a new online learning solution will not fully comply with the typologies of previous generations.

Although we cannot identify a general typology that can be attributed to E-Learning platforms, we can distinguish between several main categories of software products with online functionality that are, have been or can be used for educational purposes, depending on the characteristics offered. In the context of the coronavirus pandemic (COVID-19), UNESCO has published a list of distance learning solutions (UNESCO, 2020). The mentioned list contain both online and offline distance learning solutions, in order to support disadvantaged communities as well.

As the purpose of this research only relies to the E-Learning platforms, which are part of distance learning solutions with online functionality, we will focus on them, but also on other online tools that can be used for educational purposes. Thus, we distinguish between the following categories, for which were also presented some of the main characteristics based on the authors experience and literature review:

Table no. 1 Categories of Distance Learning Solutions with Online Functionalities

CATEGORY	GENERAL CHARACTERISTICS
Digital Learning Management Systems (LMS)	- Ensures the administration of learning, training, personal development or other types of educational courses; - Among the general facilities offered by such systems, we can mention ensuring the communication between students and instructors, monitoring, reporting and delivery of educational courses, class and user management. (Coates, et al., 2005)
Massive Open Online Course (MOOC)	- Provides unlimited participation (massive) and open access (without specific restrictions on participation) to educational resources through the Web; - Offers interactive elements in order to encourage interactions among learners and between learners and instructors, although the second one does not represent a defining requirement. (Kaplan & Haenlein, 2016)
Collaboration platforms that support live-video communication	- Provides real-time video conferencing via the Web; - Facilitates task management, scheduling and attendance tracking; - Provides instant messaging features.
Systems built for use on basic mobile phones	- They are intended for conducting educational courses predominantly through basic mobile phones; - The provided interface implies a high degree of adaptability depending on the mobile device used.

Self-directed learning content	• Provide users with educational content tailored to different levels of learning, so that they can learn individually; • Support personalized learning.
Mobile reading applications	• Provide educational content for reading; • The educational resources are often available in several languages.

Source: Table realized by the authors based on information provided by reviewing the literature in this filed and own experience

Based on the information presented through the previous table, is observed that the division into categories was carried out based on the main goals or learning needs targeted by them. In order to solve the objective of this paper, we will focus on the *Digital Learning Management Systems (LMS)* category. We consider the other categories as being only tools and not E-Learning platforms, because they serve limited purposes or can be used, to some extent, by integration with LMS.

Identification of the Platforms under Analysis

Given the category previously identified as suitable for the current research, namely LMS-type educational tools, the following step of the analysis involved the identification of the platforms that can be included in this group. Although, at present, there are multiple LMS existing on the market, the current research was limited considering the LMS-type online learning solutions proposed by UNESCO (Table no. 2). The majority of the proposed solutions are free, multilingual, tend to have a wide coverage, an extensive user base and evidence of the exercised positive impact (UNESCO, 2020).

Table no. 2 LMS-type Online Learning Solutions

PLATFORM	GENERAL DESCRIPTION
CenturyTech	It offers a full range of courses based on microlearning in order to address knowledge gaps, challenge students and support the development of long-term memory.
ClassDojo	Ensures the connection between teachers, students and parents, building class communities.
Edmodo	It provides tools and resources for managing courses and involving distance learners, offering a variety of languages.
Edraak	Represents a non-profit open online course portal for promoting knowledge in the Arab world. It is considered the first non-profit, pan-Arabic online educational platform to offer free courses to students around the world.
EkStep	Open learning platform with a collection of learning resources to support literacy and numbering.
Google Classroom	Helps classes connect remotely, communicate and be permanently organized.
Moodle	Open, community-based learning platform supported worldwide.
Nafham	Arab language online learning platform hosting lessons of educational video films that correspond to Egyptian and Syrian school curricula.
Paper Airplanes	Suitable for learners with personal tutors, promoting learning through sessions (12-16 weeks) conducted via video conferencing platforms.
Schoology	Offers tools that support instruction, learning, grading, collaboration and evaluation.
Seesaw	Provides tools that enables and encourage the creation of collaborative and sharable digital learning content.
Skooler	Provides tools aimed to turn Microsoft Office software into an educational platform.

Source: Table realized by the authors based on information provided by UNESCO (UNESCO, 2020) and vendors of the platforms

In order to facilitate the direct evaluation of the analyzed platforms, those with an extensive multilingual functionality were chosen from the above-presented list. Moreover, the platforms with limited functionality, for example focused on a certain type of learning such as microlearning, were not subject of the preset analysis. Therefore, following the filtering process, the selected software systems were: ClassDojo, Edmodo, EkStep, Google Classroom, Moodle, Schoology, Seesaw and Skooler.

Evaluation Criteria

The specialized literature offers us numerous studies targeting models of comparative evaluation between different E-Learning systems. Analyzing this field of research we concluded that most studies similar to the one aimed to be carried out in the present paper are either focused on a particular type of platform, or analyze multiple E-Learning systems from certain perspectives. We consider these approaches to be normal in a dynamic context as that of digitalization in which the continuous evolution of the ICT field and, implicitly, of E-Learning prevents us from creating a framework that can serve as a permanent guide or general model of evaluation.

A well-known solution that can be used in order to compare E-Learning systems was proposed by Britain and Liber (Britain and Liber, 2004), considering two models on which the assessment strategy can be based. The first model takes into consideration various ways in which the learning process is produced within an E-Learning platform (discursive, adaptive, interactive or reflective). The second model aims at the analysis based on criteria from an organizational perspective. The authors consider the two methods to be complementary and in terms of their application, methods such as questionnaires or grid-based evaluation were used to determine whether or not a platform meets the established criteria.

Some studies have involved the evaluation of E-Learning systems that fall into a certain typology, often targeting free or open-source platforms (Saeed, 2013; Ouadoud, et al., 2016) as they can be used by a wide range of users. Other research focused on comparative analysis from certain points of view, such as adaptivity (Reyes et al., 2009), usability (Martin et al., 2008), quality (Masoumi and Lindström, 2011; Casanova, et al., 2011) and so on. Although the research carried out over time targeted a certain purpose, the establishment of a general comparison framework being impossible, each of them included several evaluation criteria considered important for the objectives of the studies in question.

The above mentioned are just some of the studies conducted over the years in terms of evaluating E-Learning systems, often the approach being comparative. In this paper, we have limited our research by proposing an evaluation framework that aims to analyze only two main directions, namely **(a) the active involvement of participants in educational processes** and **(b) the collaboration between them when using an E-Learning platform**. Certainly, in the current context most E-Learning systems integrate facilities specific to the two directions that were selected, but in an attempt to analyze them comparatively, we consider such a framework as the one proposed useful.

In order to establish benchmarking criteria for the proposed framework of reference, multiple external sources previously presented were taken into account, the starting point being represented by the studies provided by Casanova et al. (Casanova et al., 2011; Masoumi and Lindström, 2011 and Ouadoud et al., 2016. In fact, following the review of these external sources, criteria have been extracted, adapted and grouped and their fulfillment can serve as a model for the evaluation of E-Learning platforms from the perspective of supporting active and collaborative learning.

At the same time, the establishment of the criteria followed the model proposed through the LMS Evaluation Tool (Longsight, 2013), which also served as a guide on the evaluation grid. Thus, in order to examine the analyzed E-Learning platforms, we chose to rate each criteria

in accordance with the grid proposed in the LMS Evaluation Tool: 0 (*Feature Not Present*), 5 (*Fair*), 8 (*Good*) or 10 (*Excellent*).

Table no. 3 provides an overview of the benchmarking criteria considered important for the purpose of the analysis in question.

Table no. 3 Overview of the benchmarking criteria

Functional Facilities that Enhance Active and Collaborative Learning			
CRITERIA	FAIR (5)	GOOD (8)	EXCELLENT (10)
<i>Content authoring</i>	Provides basic means for content uploading and storing.	It allows the uploading, creation and storage of content by basic means in a creative system that is part of the platform.	Provides a suite of built-in tools that can be used for creating rich media content (audio, podcasts, videos, presentations, etc.).
<i>Communication</i>	Offers basic communication facilities such as comments based on educational content or basic messaging facilities.	Offers extensive means of communication such as real-time chat or written/audio/video one-to-one communication through tools that are part of the platform.	Offers complex means of communication integrated into the platform, such as video conferencing with a large number of users.
<i>Content transfer</i>	Provides means for instructors to exchange educational content with students.	Offers extensive means by which educational content can be transferred both from the instructors to the students and from the students to the instructors.	Provides complex means by which the educational content can be exchanged between all participants in the educational process, including among learners.
<i>Integration with other platforms that support collaboration</i>	The integration with platforms or plugins that support written communication such as e-mail or those used for collaborative creation of educational content such as Google Docs is ensured or possible.	Integration with platforms that support both written collaboration and extended video or audio such as Google Meets or Zoom is ensured or possible.	The integration with platforms that support both written, video and audio collaboration, as well as the distribution of knowledge at external level, such as platforms such as social networks is ensured or possible.
<i>Testing and evaluation tools</i>	Offers built-in basic individual evaluation tools for written assessment, such as questionnaires and open-ended questions, or students have the opportunity to upload materials in a variety of formats using external software tools.	Offers built-in basic individual and collaborative evaluation tools for written assessment, such as questionnaires and open-ended questions, or students have the opportunity to upload materials in a variety of formats using external software tools.	Offers built-in individual and collaborative assessment tools through which students can solve tasks in writing, video or audio.

Source: Authors' proposal

We assume that this framework for the comparative assessment of E-Learning systems can be considered a relatively limited one, being restricted for the purpose of "labeling" the platforms evaluated exclusively for active and collaborative learning. However, it allows us to provide an overview of the platforms under analysis.

Results and Discussion

In order to analyse the selected E-Learning platforms, starting from the previously proposed framework of reference, both a detailed exploration of the information proposed by the vendors of the systems concerned and a direct observation by the authors were involved. By using the two methods of obtaining information and performing the analysis, acquiring a higher degree of significance was intended.

For the purpose of direct observation, both teacher/instructor accounts and student accounts were created within the analyzed platforms, where possible. Also, in terms of direct observation of reality through the practical simulation performed, the basic functionalities offered by the platforms were explored by testing. Although most of the analyzed systems are free, in some cases there are also possibilities to extend the functionalities through payment, option that was not chosen for the present study.

Table no. 4 summarizes the results obtained from the analysis in order to provide an overview of the facilities offered by the analyzed LMS, from the perspective of encouraging active and collaborative learning.

Table no. 4 Summary of the Results Obtained

LMS	Content creation	Communication	Content transfer	Integration with other platforms that support collaboration	Testing and evaluation tools	Total
<i>ClassDojo</i>	Good (8)	Fair (5)	Excellent (10)	Good (8)	Excellent (10)	41
<i>Edmodo</i>	Fair (5)	Good (10)	Excellent (10)	Good (8)	Excellent (10)	43
<i>EkStep</i>	Excellent (10)	Fair (5)	Excellent (10)	Good (8)	Fair (5)	38
<i>Google Classroom</i>	Good (8)	Fair (5)	Excellent (10)	Good (8)	Good (8)	39
<i>Moodle</i>	Fair (5)	Good (8)	Excellent (10)	Good (8)	Good (8)	39
<i>Schoology</i>	Fair (5)	Good (8)	Excellent (10)	Good (8)	Good (8)	39
<i>Seesaw</i>	Excellent (10)	Fair (5)	Good (8)	Good (8)	Excellent (10)	41
<i>Skooler</i>	Good (8)	Fair (5)	Good (8)	Good (8)	Fair (5)	34

Source: Authors' analysis

Based on the conducted analysis, it can be stated that all eight compared platforms represent good examples in terms of supporting active and collaborative learning, as each of them meets the established criteria to some extent. Of course, each LMS has its own strengths and weaknesses in terms of collaboration and active involvement of participants in educational processes. However, although there are comparison criteria to which some of the LMS do not perform at full capacity, by integration with other platforms, plugins or specific instruments that support collaboration they cover possible gaps to a large extent. Therefore, we emphasize the fact that the analyzed educational software solutions tend to be constantly improved, even if they do not have certain built-in facilities.

Conclusion and Future Research Directions

The results obtained from this research led to the establishment of a reference framework of comparing LMS-type E-Learning systems from the perspective of facilitating active and collaborative learning. In addition, the proposed framework was applied by comparatively evaluation of some of the most used and recommended LMS. Although current research has been relatively limited, we believe that it can be a starting point in the development of evaluation models with increased complexity, by integrating new perspectives and evaluation criteria.

With respect to the limitations of the research, the identified LMS may not be the most representative given the large number of such solutions currently available. On the other hand, we assume that the analysis by direct observation of the basic functionalities provided by the analyzed platforms may not be significant as they may offer extra facilities and privileges in the context of payment or integration with other software tools.

Future research directions are aimed at including a greater number of benchmarking criteria in the proposed framework and considering more platforms for analysis. Hence, we can offer the results obtained in the form of a recommendation regarding the choice of an E-Learning system.

Acknowledgement

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THE EVOLUTION AND THE IMPACT OF CORRUPTION AT THE EU LEVEL

Maria Nițu¹, Daniela Ioana Manea², Mihaela-Sorina Dumitrescu³ and Mihai Savin⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: maria.nitu@rei.ase.ro; E-mail: daniela.manea@csie.ase.ro; E-mail: sorina.dumitrescu16@yahoo.com; E-mail: nivas_iahim@yahoo.com

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Abstract

Corruption is a form of abuse of power in order to gain personal and private earnings, which can often take different forms, posing a real danger to national and European communities/population. Corruption can sometimes be a facilitator for terrorism, crime, tax evasion, money laundering, etc., which affects the economic growth by establishing a business uncertainty. This phenomenon is widespread at European and national level, and the mode of manifestation and its nature may differ from state to state. This generates a domino effect at European Union level, through inefficient functioning of the market and lower investments.

The aim of this article is to present the evolution of corruption in the European Union, as well as to analyze the connection of the political stability and corruption using both parametric (Pearson correlation coefficient) and nonparametric (Kendall correlation coefficient) methods. Also, in this article I highlighted the fight against corruption from the European Authorities and Institutions, as well as some example of corruption in countries where the Transparency Corruption index reveals a low corruption.

The education in the sense of building an entire society based on integrity, correlated with the anti-corruption legislation and the establishment of new institutions that can investigate and punish illegal deviations, will provide the premises for combating this phenomenon.

Keywords

Corruption, European Union, political stability, Corruption Perceptions Index, Innovation

JEL Classification

D7, D73

Introduction

Corruption favors the creation of a framework conducive to organized criminal activities, as a result of the assistance offered to criminals in carrying out illegal activities through the complicity of some public officials or corrupt politicians. According to the convention

adopted at the 1999 European Council, corruption "directly or indirectly solicits, offers, grants or accepts a financial incentive or any other type of undue benefit, which leads to changes in actions or behavior normal of the one who receives the incentive in favor of the one who offers it" (Iamandi and Dorobanțu, 2007). According to the World Bank, corruption is "defined as the abuse of public or corporate office for private gain" (World Bank Global, 2005) in the same direction, Transparency International (TI) approaches this concept, in a broad sense, as "the abuse of power entrusted to obtain of private interests or benefits" (Corruption Perception Index, 2019).

At the same time, the phenomenon of corruption, with its roots since ancient times, is considered the most serious and widespread mode of action that perverts the administration of public affairs (Conseil de l'Europe, 1996). Thus, this crime undermines the rule of law and democratic governance, with negative effects on economic and entrepreneurial development, being a hindrance to investment and economic growth (Mauro, 1995). According to Friedrich's definition, from the perspective of the public interest, corruption designates the situation in which a civil servant, power holder or occupant of a public office takes actions that are not provided by law in favor of the one who offers rewards, resulting in public injury (Friedrich, 1999). Addressing corruption from the perspective of public or official duties designates the corrupt behavior that can be manifested in the daily activities, which may deviate from the public function indices, formally in favor of private or status gains, obtained by certain groups or individuals (Nye, 1961). From an economic point of view, corruption is "a process of transfer from a predetermined system of prices to mechanisms characteristic of the free market" (Caiden and Caiden, 1999). Thus, will the authorities in the fight against corruption balance what is more efficient: eliminating the elements that benefit the corruption or will they apply punishments? (Klitgaard, 1988) Removing monopoly positions, or creating alternatives and benefits for the citizens, can create positive and visible results in both preventing and fighting corruption (Radu and Gyula, 2010).

The competitive business environment can expose companies to bribe-taking, corruption or fraudulent financial operations. The discovery and the route of the illegal transactions can go through several jurisdictions, which has led to the establishment of independent bodies to investigate and punish these activities. According to Interpol, the effects of corruption are numerous and can occur in all areas, from economic, social, political undermining to threatening the security of states. In order to prevent this phenomenon, political will and intervention are needed, as well as the training of young people (students, researchers) to face the negative effects of corruption. In the field of corruption, it is intended to implement projects with attributions in research, innovation, education, through the Europe 2020 strategy (European Commission, 2014) and the initiative "A union of innovation using the implementation tool - Horizon 2020".

The aim of this article is to present the evolution of corruption in the European Union, as well as to analyze the connection of the political stability and corruption using both parametric (Person correlation coefficient) and nonparametric methods (Kendall correlation coefficient). Also, in this article I highlighted the fight against corruption from the European Authorities and Institutions and some example of corruption in countries where the Transparency Index reveals a low corruption. For this article I used both research methods: quantitative and qualitative.

Corruption at EU level

The European Union is facing this phenomenon, which has led to the emergence of a tool designed to measure corruption, the global barometer on corruption of International Transparency. This measures every year the degree of corruption perceived in the public

sector of each country the total of 180 countries, starting with the year 1995. Thus, at European Union level, in 2019 we find a share of 66 out of 100 average score, according to the barometer "0 is highly corrupt and 100 very clean" (Corruption Perceptions Index Report, 2019). Western Europe and European Union has the best score in terms of corruption, but this does not confirm that this region is not covered by it. At the top of the countries, regarding the lowest degree of corruption, we find Denmark (87/100), which ranks 1st in the world countries, followed by Finland (86/100) and Sweden (85/100). At the opposite pole we find Hungary with a coefficient of (44/100), followed by Romania (44/100); the last in the European ranking is Bulgaria with (43/100). In order to observe the evolution of the countries within the European Union, we made a chart with their coefficients starting with 2015 and until 2019 (Fig. no. 1).

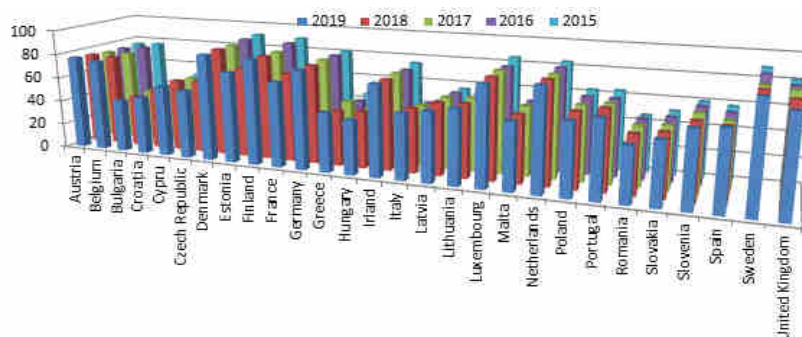


Fig. no. 1 Evolution of the corruption perception index 2019 in the European Union from 2015-2019

Source: Corruption Perceptions Index 2019

Although Western Europe and European Union recorded the best coefficient in the world, this does not prevent them from the phenomenon of corruption. The countries with the highest score in terms of corruption - Denmark, Switzerland and Iceland (Corruption Perceptions Index Report, 2019) - have still registered cases of corruption or money laundering. These cases occur as a result of the impact that big companies have on the national economy, offering them political support and relieving them of certain social responsibilities. Anti-money laundering actions can often be tricked or bypassed by powerful companies and banks that have resources, but are not willing to pay. Following the scandal in Denmark as a result of money laundering by the largest bank, Danske Bank, other banks with the same suspicions (suspicious management of payments made by non-resident client - Estonia and Russia) were investigated in countries such as Sweden- Swedbank and Germany-Deutsche Bank. Ericsson, the Swedish giant, will pay a fine to US authorities worth \$ 1 billion as a result of the bribe it has taken over 16 years in contracts with countries such as Vietnam, Indonesia, Kuwait, etc. (BBC News, 2019).

The connection between political stability and corruption and the Research methodology

This type of financial economic crime, degrades the public system, but at the same time hinders the development and activity of the national and European business environment. From the perspective of the business environment, corruption generates a state of uncertainty, reduction of processes and even additional costs, making a place less pleasant for attracting private investments. This implicitly leads to a noticeable decrease of competitiveness and it means that the economy will no longer be able to capitalize at its full potential.

Taking into consideration the **Political Stability Index- PS** - (Political Stability Index and Absence of Violence/ Terrorism- from the Worldwide Governance Indicators – WGI provided by the World Bank, Whereby financial and economic organizations provide estimates of domestic political stability in countries around the world and based on the mix of indicators that measure the perception of governments likelihood of being overturned or acts of violence up to terrorism) and the **Corruption Perception Index –CPI-** from the EU countries for the period of 2015-2018 we analyzed the connection between this two variable using a dendrogram to identify states by shared similarities and both parametric methods (Person correlation coefficient) and nonparametric methods (Kendall correlation coefficient).

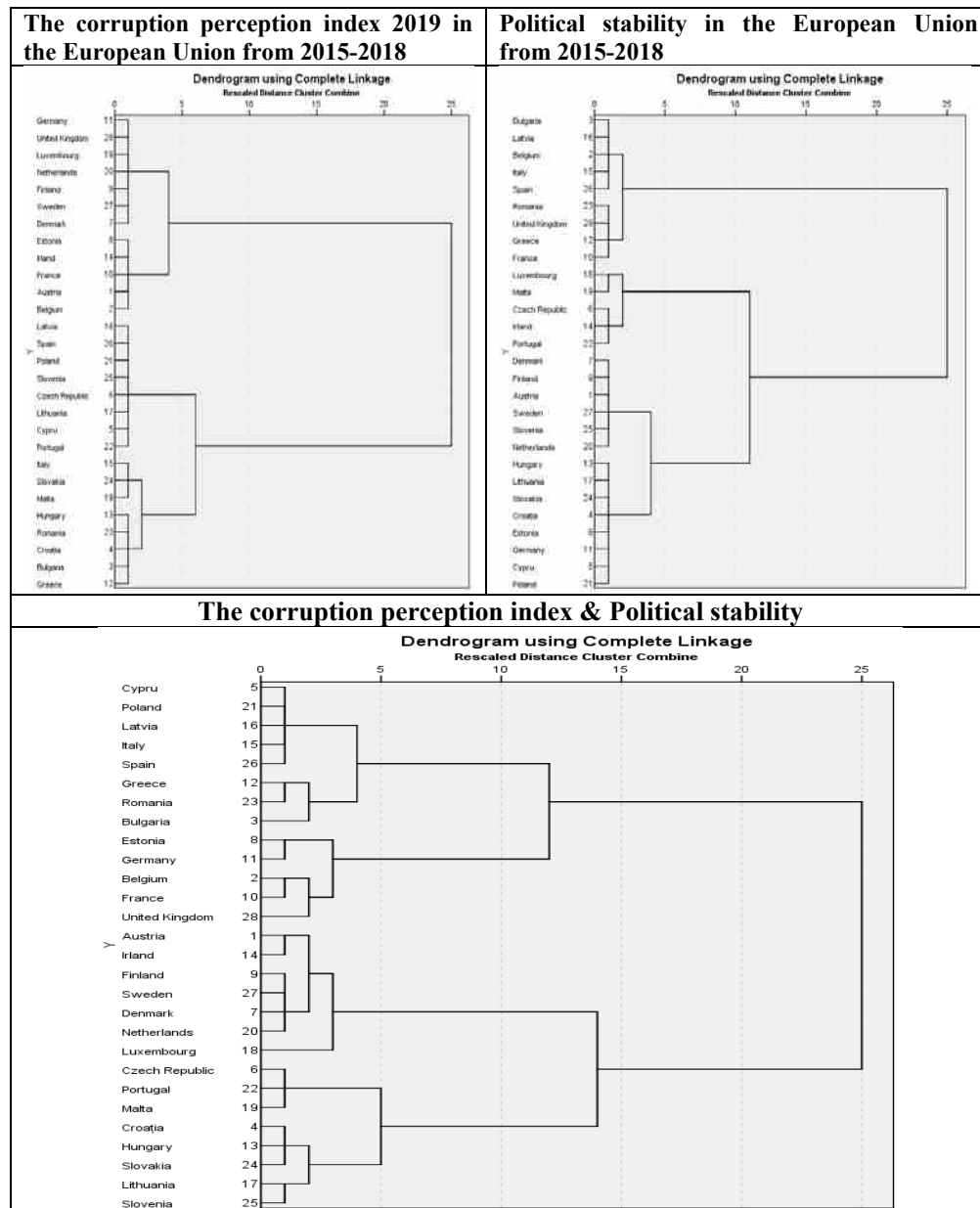


Fig. no. 2 Dendrogram UE states 2015-2018

For each of the indicators used in the analysis, for the period 2015-2018, a dendrogram was constructed on the basis of which a grouping of EU states can be identified according to the existing similarities.

Thus, the CPI groups the EU states into two main clusters which include the following states (Fig. no.2):

Cluster 1: Germany, United Kingdom, Luxembourg, Netherlands, Finland, Sweden, Denmark, Estonia, Ireland, France, Austria, Belgium

Cluster 2: Latvia, Spain, Poland, Slovenia, Czech Republic, Lithuania, Cyprus, Portugal, Italy, Slovakia, Malta, Hungary, Romania, Croatia, Bulgaria, Greece

It can be seen from the dendrogram that each of the two other groups, Romania being included in the group with countries such as: Italy, Slovakia, Malta, Hungary, Croatia, Bulgaria, Greece, countries that are prone to corruption.

The analysis based on PS allows the identification of three clusters for the EU member states (Fig. no. 2):

Cluster 1: Bulgaria, Latvia, Belgium, Italy, Spain, Romania, United Kingdom, Greece, France.

Cluster 2: Luxembourg, Malta, Czech Republic, Ireland, Portugal.

Cluster 3: Denmark, Finland, Austria, Sweden, Slovenia, Netherlands, Hungary, Lithuania, Slovakia, Croatia, Estonia, Germany, Cyprus, Poland.

If the EU states are grouped by the simultaneous use of the two indicators (*The corruption perception index & Political stability*), four clusters are obtained as follows (Fig. no. 2):

Cluster 1: Cyprus, Poland, Latvia, Italy, Spain, Greece, Romania, Bulgaria

Cluster 2: Estonia, Germany, Belgium, France, United Kingdom

Cluster 3: Austria, Ireland, Finland, Sweden, Denmark, Netherlands, Luxembourg

Cluster 4: Czech Republic, Portugal, Malta, Croatia, Hungary, Slovakia, Lithuania, Slovenia

To highlight the connection between The Corruption Perception Index and Political stability, there were used both parametric (Person correlation coefficient) and nonparametric methods (Kendall correlation coefficient). (Fig. no. 3)

Correlations						
		PS2015	PS2016	PS2017	PS2018	
Kendall's tau_b	CPI2015	Correlation Coefficient	.390**	.369**	.305**	.289**
		Sig. (2-tailed)	.004	.006	.024	.033
		N	28	28	28	28
	CPI2016	Correlation Coefficient	.369**	.353	.283**	.257**
		Sig. (2-tailed)	.006	.009	.036	.057
		N	28	28	28	28
	CPI2017	Correlation Coefficient	.367**	.351**	.281	.260**
		Sig. (2-tailed)	.007	.010	.038	.055
		N	28	28	28	28
	CPI2018	Correlation Coefficient	.385**	.374**	.299**	.273
		Sig. (2-tailed)	.004	.006	.027	.044
		N	28	28	28	28

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

		CPI2015	CPI2016	CPI2017	CPI2018
PS2015	Pearson Correlation	.559**	.524**	.501**	.505**
	Sig. (2-tailed)	.002	.004	.007	.006
	N	28	28	28	28
PS2016	Pearson Correlation	.493**	.455*	.435*	.436*
	Sig. (2-tailed)	.008	.015	.021	.021
	N	28	28	28	28
PS2017	Pearson Correlation	.463*	.413*	.396*	.402*
	Sig. (2-tailed)	.013	.029	.037	.034
	N	28	28	28	28
PS2018	Pearson Correlation	.379*	.324	.312	.313
	Sig. (2-tailed)	.047	.093	.106	.104
	N	28	28	28	28

** . Correlation is significant at the 0.01 level (2-tailed).

Fig. no. 3 Correlation Coefficient Pearson, Correlation Coefficient Kendall

The correlation matrices obtained show the existence of direct links, of moderate intensity, statistically significant, between CPI and PS, being highlighted the highest values of correlation coefficients, significant for a level of 1%.

The dependence between PS and CPI, modeled by means of the regression equation $PS = 36,309 + 0.518 * CPI$ is a statistically significant one for a significance level of 1%. Both coefficients of the model are statistically significant for a level of 1%.

The values of the two coefficients show that a CPI level close to zero determines PS values between 15,482 and 57,136, for a 95% probability, while an increase in the CPI value with 10 determines a PS increase with a value between 2.08 and 8.27, for a probability of 95%.

SUMMARY OUTPUT						
Regression Statistics						
Multiple R	0.5588					
R Square	0.3122					
Adjusted R Square	0.2858					
Standard Error	11.8662					
Observations	28					
ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	1661.959	1661.959	11.803	0.002	
Residual	26	3660.950	140.806			
Total	27	5322.908				
Coefficients						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	36.309	10.132	3.584	0.001	15.482	57.136
CPI	0.518	0.151	3.436	0.002	0.208	0.827

Fig. no. 4 Regression Analysis

In this case, political stability is an important factor that can influence corruption in terms of its evolution and operating methods. Only by political stability and a state free of abuses from high-ranked governors, the development of corruption can slow down and mitigate its impact over a country, becoming less likely to harm states companies and its citizens. Thereby, to counteract the phenomenon of corruption, political stability and actions against terrorism are needed, in order to discourage criminals and potential criminals from carrying out an illegal activity, which will generate a state of safety for the European citizens regarding the public authorities that handle this situation. Also, political stability represents the guarantee that the state and its institutions function properly, in legal and ethical parameters. The effects will also be felt in the business environment, by increasing the confidence of the entrepreneurs and investors in the regarded countries, making the European Union an attractive and competitive market.

The awareness of corruption-related issues across the political environment sets clear and tangible objectives, prioritizing the application of anti-corruption policies, to create a sense of political responsibility. Also, this phenomenon that takes place in the public institutions lowers the confidence of the citizens in the public administration's decisions. This provides a favorable framework for the development of the business environment. The lack of trust and continued uncertainty make it difficult for countries to develop a long-term strategy, impacting on the commitment of private companies to implement a sustainable development strategy (OCDE, 2013).

Thus, corruption has a strong impact on national policies as well as on the EU level; a fact that derives from the provisions of the Treaty on the Functioning of the European Union, which identifies corruption as part of the crime in which the Member States must act according to a common action, because this type of crime can have cross-border dimensions (TFEU, art. 83.1). The Commission, with the adoption of the Stockholm Program (European Council, 2010), has received a political mandate with attributions in measuring the efforts made in the fight against corruption, as well as the development of a policy to combat it at EU level, together with GRECO - the Council of Europe Group of States against Corruption. Currently, the competent national authorities can investigate and prosecute fraudulent actions against the EU budget, only in the national territory, and the bodies of the European Union - OLAF, Eurojust, Europol - do not have powers in criminal investigation and prosecution, which is why the European Public Prosecutor's Office (which will set up to

be functional at the end of 2020), an independent and decentralized office of the European Union will have powers in the investigation, prosecution, trial of offenses related to the European budget, such as fraud, corruption, etc. (European Public Prosecutor's Office, 2019).

Conclusions

Corruption is a difficult phenomenon to eradicate due to the complexity of the process and the ability to adapt to different economies and regimes.

The article highlights the fact that although some states have lower degrees of corruption, they can still face major cases of corruption. Through parametric (Person correlation coefficient) and nonparametric methods (Kendall correlation coefficient) we demonstrated the direct connection of moderate intensity, statistically significant between the CPI and PS, as well as the dependence between PS and CPI. Therefore, stability at political level (national and European), together with the implementation of a strategy designed to educate and raise awareness among researchers and citizens, will be considered as actions to fight and reduce corruption.

The education in the sense of building an entire society based on integrity, correlated with the anti-corruption legislation and the establishment of new institutions that can investigate and punish illegal deviations, will provide the premises for combating this phenomenon.

Through the Europe 2020 strategy, the Innovation Union initiative and with the help of the implementation instrument - Horizon 2020 (European Commission, 2014), new institutions that can investigate and punish illegal deviations and cases of corruption can be established. The measures adopted, as well as favoritism or conflicts of interest must be harmonized and correlated with changes in mentality and education in confronting this phenomenon. Equally important is the need of structural changes from within the core of the communities and public institutions, starting with the individuals. This should be complementary to a legislative framework that aims to ensure formal compliance, but also structural changes, starting from the individual to the communities and public institutions, and not just by creating a legislative framework that will ensure formal compliance.

In order to increase the number of jobs and investments, performance monitoring actions should be a key action in the fight against corruption, in order to achieve the performances of increasing investments and jobs; this should also be supported by the harmonization of European anti-corruption legislation by ensuring a common legislative framework of legislation. On one hand, this will allow the fight against corruption on several sectoral levels worldwide. On the other hand, the supporting measures for the State Members should consist of funded support for research and workshops that aims to share practices and experiences for the fight against corruption.

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REVIEW OF MARKETING STRATEGIES USED BY ELECTRICITY SUPPLIERS IN THE HOUSEHOLD RETAIL MARKETS

Alexandru Maxim¹

¹⁾ Alexandru Ioan Cuza University of Iași, Romania

E-mail: alexandrumaxim@outlook.com

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Abstract

As a result of market liberalization, the supply side of the electricity value chain has changed dramatically compared to two decades ago. Consumers across the EU (both households and businesses) are now able to switch suppliers according to their preferences. These changes meant that utility companies had to adapt in order to, on the one hand, take advantage of new opportunities offered by the liberalized market and, on the other hand, limit the loss of revenue caused by increased competition. The aim of this paper is to provide a summary assessment of the marketing strategies employed by electricity suppliers in the household retail markets, focusing mainly on Europe. This will be achieved through a review of the academic works that discuss market trends, as well as practices employed by electricity suppliers that can be accredited to their marketing strategy. The design of the marketing strategies will be assessed based on the traditional 4P marketing strategy model. The results show that most of the effective measures that can be implemented are centered on product innovation and pricing strategies. The Product component is approached through offerings such as 'green energy' packages, bundled services, smart meters and improved customer support. The Price component is generally designed around fixed or variable price contracts, along with price discrimination, green energy premiums and 'smart time of use' tariffs. Promotion is strongly related to communicating information about pricing or product innovation. Place is the least used component of the marketing strategy.

Keywords

electricity suppliers, market strategy, market liberalization, household consumers, renewable energy, product innovation, pricing strategy

JEL Classification

M31, O13, H31, N74

Introduction

The retail electricity markets of Europe in the 1990s were largely dominated by state owned monopolies that were heavily regulated. Starting with the mid-1990s, the European Union (EU) focused on encouraging competition in the energy sector through privatization, liberalization, deregulation and free market mechanisms, with the hope of increasing innovation and generating consumer welfare. Given the complex nature of the issue, this reform was implemented in stages, starting with the Directive 96/92/EC in 1996, followed by Directive 2003/54/EC and Directive 2009/72/EC. The ultimate goal is to generate a liberalized, sustainable, secure and affordable single European market for energy services. Although subsequent studies have shown that the results of the reform have been mixed, both in terms of prices paid by consumers and the intensity of competition, the fact remains that, currently, most EU member states have liberalized national electricity markets (with the most notable exception being Malta).

Given this context, we sought to understand how companies active in the supply of electricity have behaved in terms of designing their offerings and attracting new customers. Thus, the aim of this paper is to provide a summary assessment of the marketing strategies employed by electricity suppliers in Europe. This will be achieved through a review of the academic works that discuss market trends, as well as practices employed by electricity suppliers that can be accredited to their marketing strategy.

The decision to focus mainly on Europe is due to the similar context and regulations that govern the energy sector within the countries in the region. The design of the marketing strategies will be assessed based on the traditional 4P marketing strategy model (Product, Price, Promotion and Place) first proposed by McCarthy (1960), which has remained the primary framework used in marketing plans to this day.

This paper represents a second step in a broader assessment of marketing strategies applied in the Romanian retail market (Maxim and Roman, 2019). Over the last two years, we have observed a significant increase in the activity of residential consumers on the market and a resulting augmentation in the promotional efforts of suppliers targeting this group of customers. Due to these recent changes, the assessment will be centered on the strategies that impact the household market segment.

Aside from the current introduction, the paper includes three other sections: Section 2 provides further discussions on consumer behavior and other trends in the liberalized electricity markets, Section 3 provides a review of the marketing strategies employed by suppliers, broken down along the four Ps, and Section 4 provides the conclusion.

1. The new electricity markets

As a result of market liberalization, the supply side of the electricity value chain has changed dramatically compared to two decades ago. Consumers across the EU (both households and businesses) are now able to switch suppliers according to their preferences. This was facilitated by the unbundling of the supply and distribution components of the value chain, decoupling the need for a company to own physical distribution infrastructure from its ability to sell electricity.

These changes meant that utility companies had to adapt in order to, on the one hand, take advantage of new opportunities offered by the liberalized market and, on the other hand, limit the loss of revenue caused by increased competition. Müller et al. (2008) published a comprehensive study on the strategies used by electricity companies in the new market context of Germany – a country that has been among the first in Europe to implement large scale liberalization and deregulation. They also provided recommendations regarding strategic paths that could be pursued by similar entities in other countries, such as offering green electricity, developing product branding, adding support services, mergers and

acquisitions and diversification towards other utility services (e.g. telecoms, public lighting, gas, water).

In spite of the positive arguments that helped outline the market liberalization strategies of the EU, several studies have also identified negative effects that can be attributed to the energy sector reforms in Europe. These include an increase in average prices paid by consumers associated with the privatization of state owned power companies (Fiorio and Florio, 2013), a reduction in innovation (patents granted), as a result of deregulation and lower barriers to entry (Marino et al., 2019), as well as the emergence of oligopolies and alliances that seek to dominate the market (Boroumand, 2015; Haas, 2019). Furthermore, Özbuğday et al. (2016) also demonstrate the limited effectiveness of the liberalization process in the context of political interventions (based on a case study of Turkey).

The essential factor that is necessary for the successful liberalization of the electricity market, in addition to the adoption of adequate legislation, is the switching behavior of consumers. Even though in most EU countries the ability to switch electricity suppliers has existed for more than a decade, customers have generally been hesitant to exercise this right, especially in the case of households (Ek and Söderholm, 2008; Maxim, 2015; Mulder and Willems, 2019). Incumbent suppliers have benefited from consumer inertia, even as the markets matured and more significant numbers of customers began switching. This led to a higher level of market concentration compared to the expected results of the liberalization process (Ghazvini et al., 2019; Mulder & Willems, 2019). Indeed, data included in a study by Schleich et al. (2019) shows that a significant portion of contract switching is internal (new contracts established with the same supplier).

In order to encourage supplier switching, companies need to be aware of the needs and preferences of consumers. Some of the studies identified during our research have shown that there are two factors that are very likely to elicit the interest of consumers: reduced costs and the inclusion of renewables in the energy mix (Sundt and Rehdanz, 2015; Yanga et al., 2015; Ndebele, 2020). In addition, it is important to assess and take into consideration the variations in preference, behavior and price sensitivity determined by socio-demographic traits and household types (Permana et al., 2015; Sundt and Rehdanz, 2015; Yanga et al., 2015). Once the needs and preferences of household consumers have been identified, they can serve as the basis for designing a potentially successful marketing strategy.

2. Marketing strategies used in the household electricity markets

We performed an ample review of case studies and stated preference research that assess consumer preferences and evaluate supplier behavior. These should allow us to identify key success factors in marketing strategies that are or that could be used by European electricity suppliers in the household segment. The presentation of the results has been grouped based on the traditional 4P marketing strategy model. Of the four Ps, Price has been most prominently featured in the literature, followed closely by Promotion and Product.

2.1. Product

Even though we have observed some legal debates as to whether to consider electricity supply a good or a service (the latter being the more widely accepted definition), both these terms fall under the category of Product under the 4P framework. This category covers product design, features, range/line and support elements, such as branding, packaging & labelling, services and warranties.

The main feature that is used effectively by electricity suppliers is the 'green energy' offering, i.e. including a higher than average proportion (up to 100%) of electricity from renewable sources within the energy mix supplied to consumers. This feature is used by suppliers as a differentiating factor that attracts customers, especially if it is clearly included

in the brand identity (Hanimann et al., 2015; Herbes et al., 2020). It is even used to distinguish among the offerings of the same supplier and it can increase customer appeal and loyalty, as well as raise profit margins (Rundle-Thiele et al., 2008; Kaenzig et al., 2013; Hast et al., 2015; Mulder and Willems, 2019).

Aside from the incorporation of green energy in the offerings, suppliers can successfully use other types of product innovation. Dual fuel contracts, where a supplier provides both electricity and natural gas to a customer are successfully used in the United Kingdom (Mulder and Willems, 2019). The use of smart meters (facilitating savings through time of use tariffs) can be used to differentiate and attract certain groups of customers (Nicolson et al., 2017). Energy saving programs are another innovation, through which customers can agree to reduce their energy consumption by a certain percentage. They are encouraged to achieve the target through the use of rewards, such as discounts or financial bonuses (Hille et al., 2019).

Finally, additional value can be added to the Product component of the marketing strategy by focusing on developing or improving the support elements. One of the first product support elements included in the electricity marketing mix was environmental labelling – suppliers can obtain a license to use a special label that certifies that the electricity sold by them comes from renewable sources (Kåberger, 2003). Reduced call waiting times have been shown to increase willingness to pay (Ndebele et al., 2019). Similarly, transparent and timely communication regarding tariff changes is likely to improve long term relationships with customers, as is suggested by the findings of Pick and Zielke (2015).

2.2. Price

The Price component has the highest frequency of emergence in the literature that has been reviewed within the current paper. It can refer to the price levels themselves or the strategy behind establishing prices (including discounts, discriminatory pricing, peak and off-peak pricing etc). Its prevalence in the literature that studies market liberalization can be correlated with the fact that it is the most influential factor for consumers when they consider switching suppliers (Kaenzig, 2013; Daglish, 2016).

A typical method of differentiating contract pricing consists of using fixed prices (for a period of 1 to 3 years) or variable prices (readjusted every semester, quarter or at spot prices) (Ghazvini et al., 2019; Mulder and Willems, 2019). Ndebele et al. (2019) find that most of the customers surveyed in New Zealand have a positive preference for fixed price contracts.

As discussed in the previous section, a high consumer preference for green energy means that suppliers are able to set premium prices for offerings that provide a high proportion of electricity from renewable sources (particularly wind and solar) (Kaenzig et al., 2013; Hast et al., 2015; Mulder and Willems, 2019).

An additional pricing approach has to do with the smart meter innovation in the Product component. Dynamic or ‘smart time of use’ tariffs allow customers to reduce their monthly bill if they shift some of their consumption to hours when electricity costs are lower (such as during the night). They are successfully used in some countries, but not all customers are willing to adopt this type of contract (Ericson, 2011; Nicolson et al., 2017).

Finally, a typical way to set price levels is using discrimination based on consumption level. This approach is used both in the case of households and businesses (Simshauser, 2018). As a result, customers in Estonia have been able to combine their purchases in order to obtain a better price through collective bargaining (Vihalemm and Keller, 2016).

2.3. Promotion

Another often discussed element of the marketing strategy in electricity supply is Promotion. This element covers the promotional mix (advertising, PR, sales promotions and direct sales), including messages and the channels used in distributing those messages.

The majority of examples observed in the assessed literature refer to different forms of advertising, which are focused primarily on covering those aspects of product innovation and pricing presented in the previous two sections. Rundle-Thiele et al. (2008) present the significant care needed in designing educational advertising campaigns that highlight renewable energy as a useful and desirable purchase for consumers. Herbes et al. (2020) discuss some of the difficulties of developing effective marketing strategies in the case of traditional electricity suppliers. These findings build on the previous study that reviewed the online marketing of green energy by suppliers in Germany (Herbes and Ramme, 2014). They also propose the use of regional or ecological labeling to appeal to consumers – a measure that has been used in Sweden for nearly two decades (Kåberger, 2003).

Other aspects of product innovation and pricing would also need to be efficiently promoted in order to attract customers. For example, the adoption of ‘smart time of use’ pricing (through smart meters) is more likely among users of electric vehicles. These should be the consumers primarily targeted by advertising campaigns (Nicolson et al., 2017). In the case of the electricity saving programs mentioned in Section 3.1, the authors propose the use of tailor made messages to attract various market segments, based on cognitive, psychological and demographic traits (Hille et al., 2019).

To conclude the discussion regarding the challenges of advertising on electricity markets, we note that Daglish (2016) observes a modest impact of marketing campaigns on consumer behavior, stating that price and inertia are likely the main driving factors on the New Zealand market. However, going beyond advertising, Dolšák et al. (2019) present encouraging results on the proposed use of loyalty programs tailored to a few distinct market segments.

2.4. Place

By far the least discussed component in the observed literature, Place refers to distribution strategies, channels, locations and other aspects of logistics – delivering the service to the customers. The low incidence of research referring to Place is likely due to the nature of electricity – a service that does not require complex supply chain management to be delivered to the final customer. The production of the energy is primarily characterized by source (wind, gas, nuclear, solar, hydro etc.) and it impacts the Product component, while the transmission and distribution of electricity are separated from supply and generally represent a standard fee included in the tariff calculation for the customer.

The main element of strategy included in the literature is the focus on locally produced electricity. The origin of the energy sold by the supplier is proven to have an impact on the preferences of the consumers. Mengelkamp et al. (2019) find that consumers in Germany may be willing to pay a slight premium for locally produced electricity. In New Zealand, it is the local ownership of the electricity supply company that can sway customer purchases, all other things being equal (Ndebele et al., 2019). More evidently, place of origin is a differentiating factor among electricity suppliers in the Netherlands, where renewable energy (wind or solar) produced nationally is considered a premium product and its purchase carries with it prestige (Mulder & Willems, 2019).

Conclusion

The aim of this paper has been to assess the marketing strategies used by electricity suppliers in the household retail markets, primarily focusing on Europe. The study was based on a review of relevant literature consisting mainly of case studies and stated

preference research. We first provided an outline of the specific context of liberalized electricity markets. Next, we offered a high-level review of tactics and measures (both applied and proposed) that constitute the basis of the marketing strategies employed by electricity suppliers in the household retail markets of Europe, Australia and New Zealand. The results show that most of the effective measures that can be implemented are centered on product innovation and pricing strategies. The Product component is approached through offerings such as 'green energy' packages, bundled services, smart meters and improved customer support. The Price component is generally designed around fixed or variable price contracts, along with price discrimination, green energy premiums and 'smart time of use' tariffs. Promotion is strongly related to communicating information about pricing or product innovation to the right market segments, using an informative, almost educational, approach. Finally, Place is the least used component of the marketing strategy and generally involves a focus on locally produced electricity or local ownership of the supply company. These findings will be used as a benchmark in assessing the marketing strategies of electricity suppliers in Romania. After an assessment of household consumer expectations, we will also seek to provide recommendations on adapting these strategies in order to improve their effectiveness.

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THE INTEGRATED REPORTING AND ITS ADOPTION PERSPECTIVES IN THE EUROPEAN UNION

Bogdan-Dumitru Coșofreț¹

¹ "Alexandru Ioan Cuza" University, Iași, România

E-mail: bogdan.cosofret@gmail.com

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Abstract

The limited character of the resources used in business and the increasing needs of the shareholders and stakeholders to understand the way in which these resources are used in the business process have developed over time new business reporting practices. In view of this, the main objective of this paper is to present the integrated reporting concept and its future perspectives of being a widely accepted non-financial reporting standard.

In order to ensure a better describing, interpretation and a good contextualization of the objective of this paper I considered suitable to make a literature review using qualitative research method through content analysis.

The results obtained show that the business environment has serious intentions to report non-financial information along with the classic financial reporting. The integrated reporting represents interest for the business environment but there are also other non-financial reporting standards and regulations competing with IIRC (International Integrated Reporting Council). Also, there is sufficient evidence to show that there is a lack of international synchronization of the non-financial reporting standards which makes integrate reporting or other non-financial reporting standards not to have 100% chance of being adopted by the companies from the European Union.

Although there is an interest of the way the value is created in a company, the objective of integrated reporting must be deeper in the sustainability and environment problems. In order to have high chances of adoption, the integrated reporting must be extended and corroborated with the international requirements regarding non-financial reporting.

Keywords

Integrated reporting, non-financial reporting, environment, sustainability.

JEL Classification

M14, M21, M41, Q01

Introduction

Given the limited character of the resources and the increasingly stringent regulatory policies in the economic and environmental field, the classic financial reporting (the financial statements) proves to be outdated by its ability to deliver sufficient information to the stakeholders regarding the real business process of a company. Therefore, it came naturally to the idea of presenting to the stakeholders the business process from another perspective than the financial one: creating an integrated report which will include both financial and non-financial information. One example of this kind is the integrated reporting.

The integrated reporting is a concept developed by the International Integrated Reporting Council (IIRC) and represents a process founded on integrated thinking in which periodically an organization reports about value creation over time (IIRC, 2013). The objective of IIRC is to simplify and make more efficient the corporate reporting.

Regarding the definition of integrate reporting, there are several definitions but before listing them, I think it's better to "Give back to Caesar what is Caesar's and to God what is God's", meaning by this the presentation of the official definition given by IIRC: "integrated reporting is a process founded on integrated thinking that results in a periodic integrated report by an organization about value creation over time and related communication regarding aspects of value creation" (IIRC, 2013). Integrated reporting is "a concept that offers to readers a holistic image on the way in which the activity of an organization is performing through adding non-financial information about environment, society and governance together with financial information" (Jeyaretnam and Niblock-Siddle, 2010). "Integrated reporting is a set of processes and activities which have as a visible and concise result a periodic report on how the strategy, management, performance and the organization's forecasts allow the creation and maintenance of value on long term" (Botez, 2013). A more concise definition is "integrated reporting is a process which results in a periodic communication, an integrated report that tracks the value created by the company over time" (PricewaterhouseCoopers, 2014a; 2014b; 2014c).

Considered "the main result" of integrate reporting (IIRC, 2016a; IIRC, 2016b), the integrated reports are meant to become the main report of a company, made to replace the traditional corporate reporting (Flower, 2014; King and Roberts, 2013). To provide a global image of an organization, the reports/report issued by that organization must include both financial and non-financial information (Cozma, 2015).

The world economy is in a continuous change and the companies are facing with global competition, technological innovations and tightened regulations in response to financial and governance crisis. The accounting profession is put to the test as the old and traditional corporate reporting model does not satisfy information's user needs in order to evaluate the past and future performances of the companies (Flower, 2015).

Some authors consider the traditional corporate reporting model as being limited (Reverte, 2015) as it implies the use of the historic financial information and offers financial perspectives on short term, without taking into consideration other aspects around the company: the society, the environment, corporate governance issues etc.

The need for complete information regarding external reporting of the activities of the organizations led to expansion and transformation of the traditional corporate reporting by including social and environment aspects (Mallin, 2009; Hopwood et al., 2010). The development of a new kind of corporate reporting seems to be inevitable because it allows individuals and organizations to counterbalance the strength of financial information with the integration of the non-financial information (considered nontraditional) in the annual financial statements (Smith, 2014). In order to evaluate the risk and to create value on long term, the risk analysis involves in addition to the analysis of financial indicators also the analysis of other aspects such as: governance, society, ethics and environment (Bosch, 2016).

The integrated reporting is more than a corporate reporting framework: it creates value and brings together the information from all the departments in order to create a strategy (CIMA 2014; IIRC, 2014).

Some researchers consider that integrated reporting does not meet yet the status of a main report as at this moment there is no regulation that obliges the companies to prepare a single report (Flower, 2014). Integrated reporting is a for a new version of corporate reporting and it is essential to explain the proposed value to the potential users (Abeyskera, 2013).

There is also some criticism about integrated reporting: it focuses on investors and not on stakeholders (Cheng et al., 2014); represents a potential lack of transparency and a potential use of information by other companies (Frias-Aceituni et al., 2014); the six capitals concept may lead to inconsistent stories (Cheng et al., 2014); the existence of problems related to the audit of integrated reports (Brnit, 2012; Cheng et al., 2014).

The aim of this paper is to present the integrated reporting concept as it is described by researchers and practitioners for the reader to understand which way integrated reporting is heading. After reading this paper the reader will clear understand the place and the role of integrated reporting in corporate reporting. Also, the reader will be able to understand the current state of the integrated reporting and it chances to become a widely accepted non-financial reporting standard.

Methodology

For a better describing, interpreting and contextualizing the integrated reporting I considered it appropriate to use the qualitative research method through content analysis as the main purpose of this paper is to understand the trend and practices regarding the concept of integrated reporting developed by IIRC.

Specific features of integrated reporting

If by 2015 some authors considered the literature regarding the integrated reporting as being relatively reduced (Dumitru and Jinga, 2015; Chersan, 2015), after more than two years from the aforementioned statements the literature has taken shape, most of the publications focusing on the benefits of the integrated reporting and on the concept of sustainability as a continuous growth of academic research contributes to the explanation and development of the concept of integrated reporting (Smith, 2014).

Unlike traditional financial reporting, integrated reporting is future-oriented and reflects the connections between financial and non-financial aspects of an organization (Higgins et al., 2014). It presents a consolidated approach, bringing together different types of reporting such as sustainability reporting and financial statements (Rowbottom and Locke, 2013). The complex development of an integrated reporting framework implies a new mentality regarding the way of creating, reporting and sustaining the value in the financial reporting process (Tilley, 2014).

Conceptually, integrated reporting is a mix between traditional financial reporting and sustainability. Leaving this concept aside, the sustainability reports were published anyway for some companies, but not all the time in the annual reports, but also in some additional reports requested by certain users of financial information (banks, business partners, social partners etc). One of the weaknesses of these reports is that do not allow to users of the financial information to take a decision regarding a company as long as they do not contain sufficient financial information (Dumitru and Jinga, 2015).

An integrated financial report must be able to explain the mission and the scope of the organization, to highlight the corporate governance, to monitor the methods used to ensure the conformity with the mission and to prove the ability of the organization to measure the impact on the financial performance of the organization (Smith, 2014). According to research conducted by Berndt et al. (2014), the organizations make connections between integrated

reporting and financial performance and the organizations that draw up entirely an integrated reporting register a 30% higher increase than the organizations that do not create an integrated report.

Reporting in accordance with IIRC

The regulation of integrated reporting has its origin in South Africa where the listed companies are required to prepare an integrated report as it is presented in the King Code of Governance for South Africa 2009, known also as King III. Also, there was the option to not prepare an integrated report but the listed companies had to explain this choice. An important observation is that the principles of King III were included in the listing requirements of the Johannesburg Stock Exchange (JSE). From those explained above we can deduce that at the beginning there was only integrated reporting, without Integrated Reporting Committee of South Africa, organization that was established with the following main role: to develop a framework for integrated reporting as King III did not come up with instructions regarding preparation of the integrated reports.

Even if integrated reporting was imposed in Africa, its coverage increased and extended to Europe and not only (fig. no. 1). Even if the literature shows that the Netherlands has a rich history in corporate reporting and prominent leaders in terms of integrated reporting in the sense that many companies Dutch have had a consistent contribution to development of the IIRC framework, the most integrated reports are produced in France where 58% of the top 40 French listed companies are producing integrated reports.

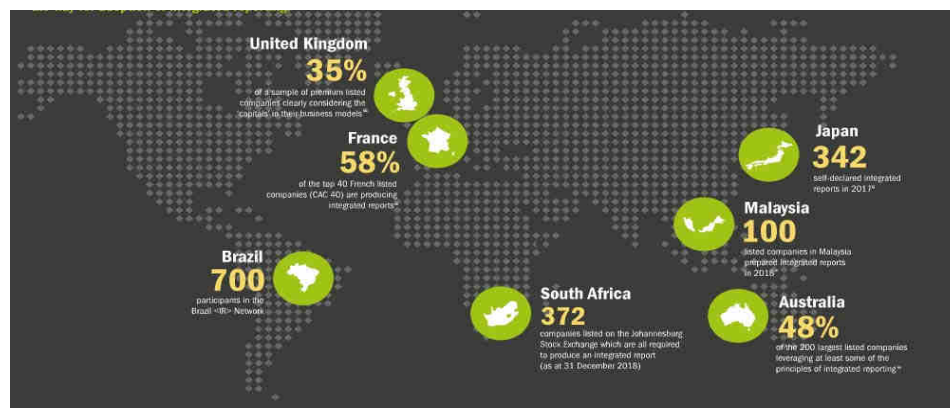


Fig. no. 1. Countries leading the way for adoption of integrated reporting

Source: International Integrated Reporting Council (IIRC), 2019. Countries leading the way for adoption of integrated reporting

The list continues with Malaysia where 100 listed companies prepared integrated reports (in 2018) and Japan which has 342 self-declared integrated reports in 2017. Good prospects are also in Australia and United Kingdom where listed companies partially meet the requirements of an integrated report: some adopt the principles of IIRC, others include the capitals in their business models etc.

Non-financial reporting in the European Union

Through the non-financial reporting directive (NFRD), the European Union (EU) law requires large public-interest companies to report specific information regarding social and environmental issues. Beginning with 2018 companies are required to include non-financial information (environment protection, social responsibility and treatment of employees, respect for human rights, anti-corruption and bribery and diversity on company boards) in

their annual reports. Currently, the reporting requirement is applicable to companies that have more than 500 employees. In this way, the NFRD will be adopted by over 6.000 large companies and groups across the EU (listed companies, banks, insurance companies and other companies designated by national authorities as public entities).

Though the non-financial reporting is mandatory in the EU by the companies who meet the criteria, the EU does not set a standard or a framework under whose flag the non-financial reporting requirements must be fulfilled. NFRD gives significant flexibility to disclose relevant information in the way in which the companies consider most useful. The companies have the freedom to choose the reporting guidelines relying on one of the following: United Nations Global Compact, OECD guidelines for multinational enterprises, ISO26000 or Global Reporting Initiative. The companies have also the possibility to use the non-binding guidelines (available from 2017) to disclose non-financial information.

It seems that the non-financial reporting is set up quite well in the European Union and the integrated reporting may lose ground.

Conclusions

The business environment seems to have serious intentions to report non-financial information along with the classic financial reporting. The integrated reporting represents interest for the business environment but there are also other non-financial reporting standards and regulations competing with IIRC. Also, there is a lack of international synchronization of the integrated reporting with the non-financial reporting standards and regulations (NFRD, United Nations Global Compact, OECD guidelines for multinational enterprises, ISO26000 or Global Reporting Initiative).

Although there is an interest of the way the value is created in a company, the objective of integrated reporting must be deeper in the sustainability and environment problems. In order to have higher chances of adoption in the EU, the integrated reporting must be extended and corroborated with the international requirements regarding non-financial reporting.

This literature review can lead to a more complex study using cantitative research method to determin the correlation between the IIRC non-financial reporting standard and the others non-financial reporting standards (NFRD, United Nations Global Compact, OECD guidelines for multinational enterprises, ISO26000 or Global Reporting Initiative).

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ASPECTS OF CONSUMERS' BEHAVIOR OF ONLINE SCIENTIFIC INFORMATION IN THE ACADEMIC ENVIRONMENT

Cristina Albu¹

¹⁾ University "Politehnica" of Bucharest, Romania

E-mail: cristina.albu@upb.ro

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Abstract

Positive and dynamic changes in the information environment have led to changes in consumers' behavior of electronic scientific information. Observations on consumers' behavior of scientific resources have focused on the exclusive use of the online environment or electronic sources since 2010 in University "Politehnica" of Bucharest. Although the University also has Romanian and foreign journals in the traditional format, the study of the consumers' behavior in this paper shows the evolution over time of the types of resources and content acquired, the evolution of connection options to publishing platforms and databases and correlation between accessibility of information access and editorial production of the authors from the University.

Keywords

attitude and behavior, consumer, electronic scientific resource, statistics, academic library

JEL Classification

I.2. 123; D.8. 83

Introduction

A constant concern of the academic environment is that of extending the opportunities for learning and research by digital culture development. By improving the services of scientific documentation and information resources access, the academic community will assimilate knowledge and skills in an efficient, effective, and ethical way.

Observations on the evolution in consumers' behavior of scientific information resources was focused on monitoring the statistics of the use of scientific resources in electronic format and explaining the behavioral changes considering several specific factors in the academic environment.

Economic, social, political, technological, legislative, or demographic changes have led to the emergence of a new type of consumer of goods and services, in the area of digital scientific information. Before determining the reasons for which the behavior of the information user changes, we must identify who are the ones requesting information for what reasons and what

is the ultimate purpose of using it. In the academic area, considering their contextual role, several types of digital information users are identified as: author, contributor, peer-review, editor, publisher, administrator, reader (teacher, doctoral student, and researcher).

The success of a business activity on the publishers' market is ensured by the understanding of the consumers' feedback in order to know and anticipate the information and documentation needs, through the goods and services offered.

Changing environmental organization face, including in universities, put increasingly more emphasis on information flow within them and in the use or reuse of information resources. New information/research landscapes in academic communities focus on digital information producer/consumer and it could lead to a shift towards enhancing green consumer behavior.

We can identify several factors that may influence the information consumers' behavior in the academic area:

- *External factors:*

- Infrastructure. Technical aspects regarding implementing Information and Communication Technologies (ITCs) and develop digitization activities.

- Market. Evolution of the publishing market, increasing the competition in the delivery of the scientific.

- Needs/ Requests. Evolution of the consumers' information/documentation needs.

- Globalization. Information globalization.

- Legislation. Aspects of European and international legislation regarding the dissemination of the results of scientific research.

- *Internal factors:*

- Organization. Changes in the universities organizational culture.

- Services. Designing new platforms in libraries that will manage all aspects of print and electronic resources. Increasing types of library services.

The **purpose** of this research is to identify the consumers' behavior of scientific literature electronic resources in University "Politehnica" of Bucharest (UPB) and to track its evolution over a period of 10 years. With the creation of the Romanian consortium -Anelis Plus-, access was made possible by subscribing to the resources desired under the conditions of the consortium.

The **objective** of the research in this paper is to conduct a study on the evolution of consumers' behavior of scientific information regarding the use of electronic resources in academic field. Have been highlighted aspects of:

- evolution in time of the types (journals, e-books, data bases, etc.) of the resources and content acquired by University "Politehnica" of Bucharest.

- evolution of connection options to publishing platforms and databases which can provide information on increasing consumers' informational independence.

- correlation between accessibility of information access and editorial production of the authors from the University.

Review of the scientific literature. Changing of informational environment and research results dissemination

Positive and dynamic changes in the information environment have led to changes in consumers' behavior of scientific information. In the context of this article we understand the notion of **behavior** as a relationship between information dissemination (communication) and information searching in Information Retrieval Systems (IRS).

The academic and research communities have a set of common goals, and an already established set of mechanisms for the communication of scientific information. The increased use of websites with scientific content and search engine optimization facilitated the access to information and, at the same time, improved the delivery of publishers' electronic resources. Thus, publishers' websites have become more and more user-friendly and improved by adding

machine-readable metadata. (Scholastica, 2019). Other ways of electronic information and documentation are increased by using e-mail, blogs, social media that involves more contributors. Now, readers are more focused on using free resources to find articles, which is why focusing on Open Access content is essential.

The remote (online) use of resources is done for different purposes depending of the user needs. But the final information receiver is always the reader. They have their own interest in accumulating knowledge. The creators, instead, make efforts to include much referenced information and get personally added value. However, this information must be easy understandable to the consumer (reader). The use of social media as a means of informing and evaluating scholastic resources in previous years has increased in importance. However, it is now recognized that a certain level has been reached where growth is slow.

Generation Z, iGen, or Centennials, the first generation of digital natives which are now in the academic study period, and from which future researchers will come, will change the paradigm of scientific communication and information behavior. They consider Internet access and information as a fundamental right (Francis and Hoefel, 2019).

Where will the future conduct us? Generation Alpha is prepared to implement a new paradigm in information creating, because "Alphas haven't just grown up with technology — they've been completely immersed in it since birth" (Business Insider Intelligence, 2019).

The iterative processes necessary to ensure the life cycle of scientific information will determine differences in the consumer's information behavior until the consumer-creative dual effect with knowledge is obtained.

The rules of good conduct in the academic and research activity have decisive implications in the activity of communication, publication, scientific dissemination and positively influence the behavior of consumers of information. We can identify some aspects in this regard:

- *involvement in research*. Research is a social process. Information activities avoiding "digital fragmentation" by consulting journals from databases and scientific platforms represent a wish becomes reality. Also, the involvement of the collaborators in the decision-making processes will influence the users' behavior.

- *accepting changes in communication and copyright*. We refer to rights that are transferred to publishers or retain to authors/university. An increased attention is to Open Access content (publish or read) and linkage Open Data.

- *structure of articles published according to international academic writing practices*. The evolution of the organization of the constituent parts of a scientific article has led to a selection with a higher accuracy of the materials of interest. For example, the evolution of papers abstracts to structured abstracts has led to the optimization of the time consumed for accessing the appropriate resource. In this way, the consumer of information will be guided more precisely on the opportunity of accessing the scientific content.

- *academic requirements*. Necessary and mandatory minimum standards for conferring didactic titles in higher education or grades in research-development domain made changes in information consuming. In this respect, peer-reviewed articles became a guarantee of the scientific quality of the content. An important development is recognized in digital institutional repositories building.

- *organizational aspect (consortium)*

Universities libraries become a node in the academic network. Their increasing role is represented by the flexibility in ensuring access to online resources and their management in avoiding redundant storage of information from multiple providers. In this respect, universities, libraries, research institutes or other organizations could be organized in national consortia to assure the access to scientific publications and international databases. In our country Association of Universities, Research and Development Institutes and University Central Libraries from Romania (Anelis Plus) achieves these goals.

Proposal for Case Study. The evolution of the use of electronic resources of scientific literature in the UPB between 2010-2019

Requested electronic resources identification

Access to the scientific information in its various forms ensures the assimilation of high quality knowledge and drives the increase of competitiveness. Access to digital information and the accessibility of the content determine evolution in time of the types of the purchased resources. In this context, the Library of University „Politehnica” of Bucharest adapts its development activities in order to better understand the needs of users and to focus on providing value-added services. For example:

- *access to digital information by developing:*

- Open Access Public Catalogue;
- Virtual collective catalogs (RoLiNest);
- Institutional digital repositories (RomDoc).

- *evolution in time of the resources types and content purchased by Anelis, Anelis*

Plus, Anelis Plus 2020:

- Online journals
- E-books
- Bibliographic and bibliometric databases
- Archives of scientific platforms of the most important publishers. Those usage is positively affected when back files are included with a current electronic subscription.

- *accessibility of content (mobile environment and full text access, OA, perpetual access, archives:*

- Abstracting and indexing databases are the first steps in searching information. (Scholastica, 2019)
- Articles full text access by current subscription in Big Deals contracts (journal packages subscription) or perpetual access of subscribed resources
- Open Access resources availability.

Evolution in time of statistics on the use of electronic resources

The study of the evolution in time of accessing scientific resources in electronic format was made according to three criteria:

- statistics by resources submitted
- statistics by months of access
- statistics by years of access

Receiving statistics from the database provider is the default validation.

Evolution of the type of content accessed and the access modalities: Internet Protocol address and mobile access

In the table below, we present the electronic resources (databases, platforms of journals, archives) subscribed by University „Politehnica” of Bucharest between 2010-2019 and the related statistics, (Table no. 1)

The statistics presented were obtained from the Romanian provider, via AnelisPlus, the consortium with which UPB runs an agreement.

The statistical figures count both the number of accesses of the scientific databases made using the University's ITC infrastructure (Internet Protocol (IP) domains) and the number of authorized mobile connections from devices outside the institution. The mobile access was counted since 2015 until present separately from IP access.

Table no. 1 Number of hits counted for resources access between 2010-2019

	Number of hits counted by the electronic resource provider IP address access/mobile access									
	2010	2011	2012	2013	2014	2015	2016	2017	2018*	2019
A	147157	99320	99938	150496	148997	159188 4201	207106 116073	150422 110051	91568 79931	118588 142911
B	19131	17572	15856	59795	15548	17384 555	7705 14493	no data 19888	no data 1390	3206 11989
C	-	-	-	20829 Aug- Dec	27965	31075 1767	46468 23800	2073 Jan- Apr 11023 Jan- Apr	29034	40492 40621
D	35611	83295	57476	80055	85348	112462 3782	150932 116092	158770 164851	88361 186745	162610 238348
E	-	21994	19413	39134	44469	50253 6237	53697 150465	49168 272390	27774 539822	55858 878391
F	-	8470	7502	7424	-	-	-	-	-	-
G	-	16324	1225	-	-	-	-	-	-	-
H	818	863	702	-	-	-	-	-	-	-
I	2604	2670	3027	-	-	-	-	--	-	-
J	7142	1462	769	5216					12536	10450
Total per year	212463	251970	321702	331263	322327	370362 16542	465908 420922	360433 578203	237623 841829	391204 1312260
						386904	886830	938636	1079452	1703464

Legend

Resource:

A= Elsevier ScienceDirect Freedom Collections; B= Springerlink Journals; C=IEEE/IEL; D=ISI Thomson Reuters (Clarivate Analytics); E=Scopus; F= Wiley; G=ProQuest; H=Emerald; I=AIP, IOP; J= Other resources (Taylor & Francis, Cambridge, Oxford University Press, SciFinder, MatSciNet, Nature, Science, American Association for the Advanced of Science)

*The period January-April 2018 was not counted by the electronic resources' provider. Access was achieved through a free trial.

Source: data collected from statistics provided by Anelis Plus and processed by the author

A graphical presentation of this statistic reveals a significant increase in the number of hits since 2015, an increase that we can explain on one hand by facilitating the accessibility of information resources, but also by the rules imposed in the research activity regarding the scientific publication, (fig. no. 1).

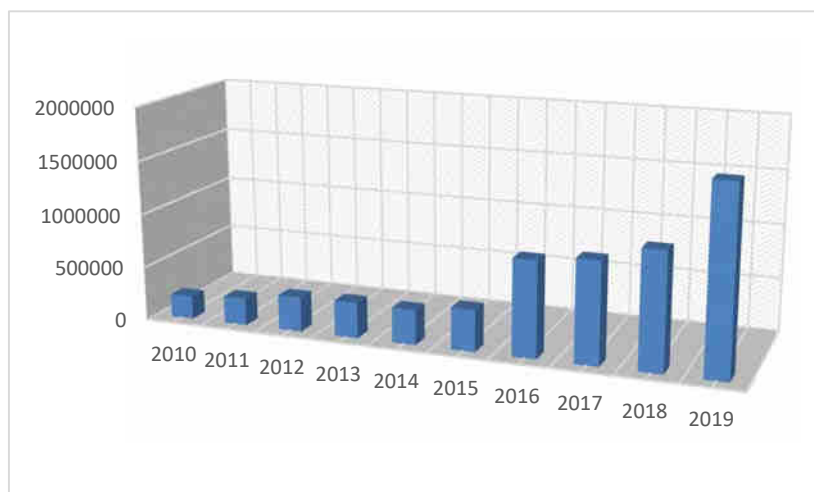


Fig. no. 1 Statistics of accesses / searches in electronic resources of scientific literature subscribers

Source: data collected from statistics provided by Anelis Plus and processed by the author

The intensification of the use of bibliometric databases can be seen from several angles. First, as a validation of the research activity of the universities and second as a modality to raise the authors visibility in academic or research field.

As it appears from the data collected, until 2016, ISI Thomson (now called Clarivate Analytics) was accessed more frequently, and after 2017 there was a significant flip to Scopus. (fig. no. 2).

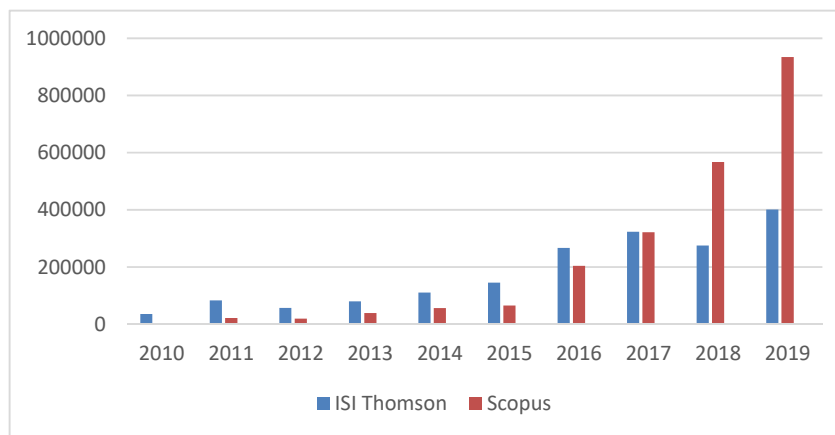


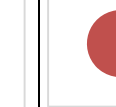
Fig. no. 2 Statistics on the use of the ISI Thomson Reuters and Scopus bibliometric databases

Source: data collected from statistics provided by Anelis Plus and processed by the author

The diversification of the connection possibilities with the content providers has led to a change in the behavior of the information user. Thus, over the years, access from locations other than the University has grown exponentially. (Table no. 2). The significant increase for mobile access was, in 2016, over 45 percent compared to the previous year, continuing steadily.

Unfortunately we cannot quantify the accesses to the Open Access scientific information that were made outside the Big Deal subscription for the users of the University, but this is considered to be significant.

Table no. 2 The number of accesses to the subscribed resources depending on the type of connection. Percentage of mobile access from all queries

Access way	2015	2016	2017	2018	2019 partial
IP	370362	465908	360433	237623	391204
AM	16542	420922	578203	841829	1312260
 IP AM	 (2.58%)	 (47.46%)	 (61.60%)	 (77.98%)	 (77.03%)

Source: data collected from statistics provided by Anelis Plus and processed by the author

Another aspect that can contribute to the understanding of the consumer behavior of scientific information in the academic environment is the percentage analysis of the categories of users. From the data provided by the scientific literature database provider (SC E-nformation SRL) for the „user profile”, for the University „Politehnica” of Bucharest, in 2019, the following percentage distribution was obtained:

- teachers 53%
- doctoral students 16%; undergraduate students 16%; postgraduate students 10%
- other categories 5%

These percentages lead us to the conclusion that the awareness of the use of electronic scientific resources and the approach of responsible behavior in the online environment is formed from the first years of study.

Correlation between the number of accesses of electronic resources and the number of articles published by the University

As shown in table no. 1, in 2015 and 2016 there was a significant increase in the access of subscribed electronic databases. If we identify the indexed publications of our University in ISI and Scopus, we find that the growth trend has been continuous, without having a significant threshold. However, the year 2015 was the one that marked the change of the hierarchy regarding the number of publications identified in the two databases. Thus, between 2010 and 2014 the works were most indexed in Scopus. After 2015, most publications are indexed in ISI Thomson. (Table no. 3)

Table no. 3 Number of publications found in ISI Thomson and Scopus

Resource	2010	2011	2012	2013	2014	2015	2016	2017	2018
ISI Thomson. Reuters	1441	1357	1391	1658	1559	2309	2254	2409	1959
Scopus	1747	1632	1861	2003	1802	2144	2025	2233	2015

Source: data collected by author from Scopus and ISI Thomson databases

Conclusions

Academic activity, research and in general the social mechanism of science are based on cooperation and a permanent exchange of knowledge. In this way, the integrative aspect of communication in the relations between creators and consumers of information is identified. Through this social dimension of scientific communication, we can identify the current behavior of the consumer of scientific resources. The capabilities for analyzing and evaluating digital information and documentation resources that determine knowledge creation strategies will be developed. Communication, cooperation, evaluation, and knowledge creation are prevalent in the consumer's information behavior and assimilate through the usual online activities such as searching, browsing, indexing or data mining.

From the data analyzed in the case study, the growing interest of the students for the access to the electronic resources of scientific literature made available through University subscriptions is highlighted.

Thus,

- for the year 2019 the percentage of students who have created an account is identical to that of the doctoral students, which means that the concern for consulting the electronic scientific resources and acquire the research skills is present from the undergraduate.

- promoting and sharing works through open access, open science. Alignment with EC directives

- transition from individual or small research communities' access to knowledge access by consortium through sharing of resources and costs

- the option to create an information environment for independent teaching and research, not conditioned by the ITC infrastructure of universities

- the acquisition of new skills and their integrated application: save searchers, bookmark, citation counting, export references, etc.

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STAKEHOLDER PRIORITIZATION IN EUROPEAN COMPANIES

Bogdan Ștefan Ionescu¹, Liliana Feleagă² and Oana Marina Bătae³

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

E-mail: bogdan.ionescu@cig.ase.ro; E-mail: liliana.felega@cig.ase.ro

E-mail: oana.marinabatae@gmail.com

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Abstract

The objective of this paper is to analyse stakeholder prioritization in European companies. In this respect, an interpretative content-based analysis of the social and environmental information is used. The sample encompasses twenty-six large companies with available sustainability reports for 2018 drawn up in accordance with Global Reporting Initiative - GRI (2013). The indicators from the GRI Context Index were associated with the interests of four groups of stakeholders (employees, customers, environment and society). We considered that these indicators reflect the interests and the expectations of stakeholders that are associated with them. The obtained results highlight a link between this prioritization and the industry to which the company belongs or the country where it is domiciled. Stakeholders who hold power have a high level of their interests being met.

Keywords

stakeholder prioritization; sustainability reports; GRI; Euro Stoxx 50; industry, country

JEL Classification

G30, M41, Q01

Introduction

Over the past decades, increasing attention has been paid to environmental issues, looking at their impact both from a social and economic point of view, as well as from a political point of view. The environmental components of different products and services are appreciated by the company (Owen and Scherer, 1993). As a result, companies are trying to better respond to the expectations of more and more green consumers and more environmentally-minded investors.

From environmental concern, a number of international regulations (ISO 14000, EMAS), European directives (Directive 2013/34/EU, Directive 2014/95/EU) and national legislation have emerged over time. Some of these regulations set obligations for certain companies to publish information about the environmental matters, social and employee related matters and

respect for human rights, as well as a description of the policies followed by the enterprises in relation to these aspects.

In this context, reporting of environmental and social information represents often a challenge for entities to cope with. The requirements on this line come from different sources and cannot be ignored even though they are often complex. In the conditions in which the entity's resources are limited, it appears the issue of stakeholder prioritization.

Stakeholder prioritization is discussed in the literature from two perspectives. In the first perspective, managers assess how they respond to different categories of stakeholders, taking into account the attributes they possess. It should be noted, however, that "management may view one stakeholder as inconsequential or minor one day; but find that same group demanding their full attention the next day " (Stephens et al, 2011). In order to identify stakeholder relevance, Mitchell et al. (1997) proposed stakeholder salience theory. Stakeholder salience is the degree to which stakeholders are visible, vocal and important to an entity, and is determined by three attributes of stakeholders: power, legitimacy and urgency. In the second perspective, the prioritized stakeholders are those who receive the highest level of fulfilment of their interests. Some studies showed that there are differences between the perception of the importance of stakeholders and the level of meeting their interest (Vazquez-Brust et al., 2010). Other studies found that the allocation of resources to priority stakeholders is linked to the company's financial performance (Michelon et al., 2013). However, there are not conclusive results to support this link in all areas of corporate social responsibility.

The objective of this paper is to analyse stakeholder prioritization in European companies and to determine whether it differs depending on the industry it belongs or on the country where the company is domiciled. In order to attained this objective, we formulated two hypotheses: H1: The level of fulfilment of stakeholders interests is affected by the industry to which the entity belongs.

H2: The level of fulfilment of stakeholders interests is affected by the country where the company is domiciled.

The results confirmed the both hypotheses. In other words, the stakeholders from some countries and/or some industries exert more pressure on the companies to have their interests met and the managers are trying to better respond to their expectations.

The remainder of the paper is structured in five parts. The next part presents the background literature on the concept of stakeholders and on the stakeholder prioritization framework. The third part explains the methodology used: sample, grid and data collection. The fourth part quantify the impact of two determinants (country and industry) on the prioritization of stakeholders. The last one draws conclusions and directions for future research.

Literature Review on stakeholder prioritization

The organizational performance of an entity can be analyzed and assessed, to a certain extent, on how managers interact with its stakeholders (Clarkson, 1995). The academic research has reserved a special place for stakeholders, even though this concept becomes vague when it is broken by the American cultural context (Damak-Ayadi et al, 2005). Thus, according to Freeman (1984), the stakeholder is "any group or individual who can affect or is affected by the achievement of the organization's objectives". For Mercier (1999), stakeholders are "all the agents for whom the company's development and good health are of prime concern". Donaldson and Preston (1995) consider that stakeholders are "persons or groups with legitimate interests in procedural and/or substantive aspects of corporate activity". Similarly, Clarkson (1995) speaks of groups or individuals holding "ownership, rights or interests" in an organization. The definition proposed by Bryson (1995) is, however, the most comprehensive one: "a stakeholder is defined as any person, group, or organization that can place a claim on an organization's position, resources or output or is affected by that output."

In the conditions in which stakeholder reporting requests are complex and the entity's resources are limited many studies attempted to achieve the stakeholder prioritization. This studies deals with the topic of stakeholder prioritization under two different perspectives. The most adopted perspective is linked to the manager's perception of the importance of every group of stakeholders. Thus, Freeman (1984) believes that managers should identify all stakeholder groups, should determine the importance of each group and the extent to which their requirements are currently met by the entity and, based on the results obtained, should modify the entity's policies in order to take into account requirements remained unsatisfied. Similarly, Pedersen (2011) states that managers need to identify the different groups with which the entity has relationships, take into account their legitimate interests, and develop channels of communication between themselves and the organization, the role of the channels being to allow a dialogue where the needs of the various parties can be genuinely negotiated (Morsing, Schultz, 2006). In their turn, Mitchell et al. (1997) proposed the theory of stakeholder salience which "must explain to whom and to what managers actually pay attention". They have identified three attributes of stakeholder salience: the power that a stakeholder group is perceived to have, the legitimacy that it is considered to have and the perceived urgency for its requirements.

Power is defined as the ability of stakeholders to influence the organization's decisions and the distribution of value (Mitchel et al, 1997). The use of power as an element of the stakeholder salience is also supported by the neo-institutional theory that coercive pressure strongly influences managers' decisions. Legitimacy is the generalized perception that a group's actions are appropriate in the context of the social system (Morsing, Schultz, 2006). Legitimacy is often connected with power, because normally a manager will not pay attention to a strong actor that he does not considered to be legitimated. The third attribute is the urgency and represents the extent to which a group of stakeholders believe that its claims are time sensitive or critical (Mitchel et al, 1997).

The level of salience varies according to the number of attributes that stakeholders have (Gao and Zhang, 2006). Generally speaking, it is considered that the level is low when the stakeholders have only one attribute, moderated when they have two attributes, respectively high when they have all three attributes. And, obviously, managers pay the greatest attention to the stakeholder groups that have the highest level of salience (Dooley and Lerner, 1994). Many authors used the conceptual framework created by Mitchell et al (1997). Thus, Agle et al. (1999) demonstrated empirically that there is a positive relationship between the number of attributes held by a stakeholder group and stakeholder salience. Ryan and Schneider (2003) investigated, based on archive information, salience for six categories of institutional investors and recommended that managers be queried about their perception of power, legitimacy and urgency. Magness (2008) studied the reactions of shareholders and managers in the context of two environmental accidents in the mining industry, and pointed out that the stakeholder status is determined by the decision-maker. Parent and Deephouse (2007) highlighted the importance of urgency, stating that, in principle, stakeholders that have the urgency of being the most important attribute are groups of activists, but they concluded that power and legitimacy are more important attributes for the salience stakeholder. Harvey and Schaefer (2001) highlighted that special requirements made by governmental organizations are considered urgent, but government's salience also comes from power and legitimacy. Ullmann (1985) conceptualized the relationship between stakeholders' attributes and the entity's social performance, demonstrating that entities that conduct an active policy of influencing relationships with key stakeholders achieve greater social performance.

Mitchell et al. (1997) suggested that the stakeholders' attributes are variable and that the peculiarities of managers moderate the relationship between these attributes and salience. Rowley (1997) pointed out that the influence of the stakeholders is not only determined by their attributes, but also by how different groups interact and form a network. He

demonstrated that entities that are the focus of several stakeholder groups are willing to show higher social performance if those groups coordinate their efforts. Winn and Keller (2001) consider that stakeholder salience is not just about the number of attributes held, but about the degree to which a stakeholder possesses those attributes. Introducing different degrees for the three attributes leads to a more differentiated stakeholder salience image. In addition, this concept is flexible in the sense that, over time, some attributes are lost, others are acquired, and there is the possibility of migrating from one category of stakeholders to another.

The second perspective used in the studies on the topic of prioritization is associated to meeting stakeholders' interests. The studies in this category are few and many of them investigated the link between the corporate performance and the allocation of resources to priority stakeholders (Michelon et al., 2013) or the relationship between the perception of the importance of stakeholders and the way in which the stakeholders are treated by the management (Vazquez-Brust et al., 2010).

Methodological Aspects: sample, grid and data collection

The objective of this paper is to analyse stakeholder prioritization in European entities and to determine whether it differs depending on the country where the entity is domiciled or on the industry it belongs.

The sample is formed by the companies included in the index Euro Stoxx 50. It was verified that these entities have available sustainability reports in English. To obtain a homogenous sample, we decided to eliminate financial and insurance companies, thus the final sample consists of 26 large French, Spanish, German, Dutch, Belgian, Italian, Irish and Finnish companies from 14 super-sectors. We selected large companies because they had an obligation to use the 2014/95/EU Extra-financial Directive from 2017, January, 1st. We collected data for 2018 because we wanted to observe the situation after the transposition of the Directive in all selected countries.

Data collection from the annual reports was conducted in relation to the interests of stakeholders, while taking into account the requirements of the GRI (2013). Version 4 (G4) of the GRI Content Index has seventy-nine indicators. Sixty-six of these indicators could be associated with the interests of four groups of stakeholders: employees, customers, environment and society (Table no. 1).

Table no. 1 The indicators associated with the interest of stakeholders

Stakeholder groups	Indicator code	Number of indicators	Aspects covered
Employees	EC3, EC5, EC6, LA1, LA2, LA4 – LA13, LA16	16	Economic performance, market presence, employment, labour/management relations, occupational health and safety, training and education, diversity and equal opportunity, equal remuneration for women and men, supplier assessment for labour practices, labour practices grievance mechanisms
Customers	PR1 – PR4 – PR6 - PR9	8	Customer health and safety, product and service labeling, marketing communications, customer privacy
Environment	EN1 – EN13, EN15 – EN26 EN28 – EN29, EN32 – EN34	30	Materials, energy, water, biodiversity, emissions, effluents and waste, products and services, transport, overall, supplier environmental assessment, environmental grievance mechanisms
Society	EC7, SO1 – SO11	12	Indirect economic impact, local communities, anti-corruption, public policy, anti-competitive behaviour, supplier assessment and grievance mechanisms for impact on society

Source: authors, based on G4

In this paper, we consider that GRI indicators reflect the interests and the expectations of stakeholders that are associated with them. To measure the level of fulfilment of stakeholders interests we carried out content analysis by developing a scale. The indicators were analysed one by one, assigning 1 point for reporting, and 0 (zero) points for not reporting.

Results and discussion

After data collection, we calculated, for the four stakeholders individually, the frequency of indicators reported in relation to the total indicators associated with each stakeholder. This reporting frequency reflects the level of meeting stakeholders' interests. The results are found in Table no. 2.

Table no. 2 The frequency of indicators reported in relation to the total indicators

Stakeholders groups	Indicators reported	Total indicators associated	Indicators reported / Total
Employees	252	416	60%
Customers	115	208	55%
Environment	467	772	60%
Society	186	312	60%

Source: authors, based on research

Our results show that there are no major differences between the four categories of stakeholders in terms of level of meeting their interests. Even a level of 60% can only be considered satisfactory, in fact this level may be higher because in case of some companies, some indicators do not apply. Not all companies informed in their report what indicators do not apply, so we couldn't exclude them.

Previous studies have emphasized that stakeholders' pressure differs from industry to industry, as each industry focuses on different social issues (Weber and Marley, 2010). Thus, industries that establish direct contact with consumers are attentive to their needs, industries with strong trade unions or employing more specialized employees focus on the needs of employees while industries that are more dependent on natural resources in their activities, consider the environment the most prominent stakeholder.

The results for our sample are presented in Table no. 3 and confirm the hypothesis that the level of fulfilment of stakeholders interests is affected by the industry to which the company belongs.

Table no. 3 The level of meeting stakeholders' interests by industry

Industry / Stakeholders	Employees	Customers	Environment	Society
Aerospace	78%	62%	55%	50%
Automotive industry	87%	92%	69%	94%
Chemicals	94%	100%	73%	100%
Chemistry	94%	100%	88%	79%
Construction and materials	94%	25%	73%	33%
Electric utility	56%	56%	69%	75%

Industry / Stakeholders	Employees	Customers	Environment	Society
Food and beverage	23%	33%	53%	42%
Goods and Services	87%	25%	60%	42%
Personal and household goods	34%	25%	40%	21%
Petroleum	62%	75%	83%	75%
Pharmaceutical industry	37%	44%	63%	71%
Real estate	75%	37%	61%	65%
Retail	56%	62%	60%	62%
Technology	40%	33%	36%	36%

Source: authors, based on research

Although some results may be considered surprising (reduced attention paid to clients in sectors such as Goods and Services or Food and beverage), it is clear that each sector has particular characteristics and managers take these characteristics into account when directing resources to stakeholders.

The results presented in Table no. 4 confirm the hypothesis that the level of fulfilment of stakeholders interests is affected by the country where the company is domiciled.

Table no. 4 The level of meeting stakeholders' interests by country

Country / Stakeholders	Employees	Customers	Environment	Society
Belgium	31%	37%	39%	67%
Finland	68%	50%	67%	58%
France	45%	37%	57%	45%
Germany	77%	70 %	66%	72%
Ireland	94%	62%	73%	67%
Italy	62%	62%	87%	92%
Netherlands	42%	47%	43%	42%
Spain	87%	100%	90%	100%

Source: authors, based on research

We could observe that the level of fulfilment of interests is high for all four groups of stakeholders in Spain and it is low in France and Netherlands. The low level in France is surprising considering that in this country there are several national environmental regulations (as New Economic Regulations or Grenelle Laws). But probably the lack of penalties determines companies not to disclose in environmental and social information. In the other countries there is a prioritization of the interests of some stakeholders. For example, in Germany the employee stakeholder presents a higher level than other groups. This result can be explained by the fact that in German unions are strong and the employees are involved in the decision making process in companies. Moreover, the German companies included in our sample are from more dynamic and high technology industries that use more specialized employees. The environment stakeholder presents second highest score in Finland. Such a

result seems normal for a country known for its value system built on respect for the environment.

Conclusions

In the context in which corporate, social and environmental reporting is a major challenge for accounting practice and research, our study investigates the stakeholder prioritization in European companies. In order to achieve this, we proceeded to content analysis for a sample of companies included in the index Euro Stoxx 50. We selected large companies because they are expected to be more attentive to the requirements of stakeholders than smaller ones, and they had an obligation to use the 2014/95/EU Extra-financial Directive. Data collection from the annual reports focused on GRI indicators associated with the interests of four stakeholder groups: employees, customers, environment and society.

In this study, we did not intend to judge corporate sustainability reporting for sample entities, nor to describe how they managed the divergent interests of stakeholders, but only to understand the variables that determine stakeholder prioritization. Moreover, given that all companies in the sample have applied GRI, we believe that the differences in the level of meeting stakeholders' interests and sustainability reports are related to the managers' ability to take advantage of specific relations rather than to the external reporting guidelines applied.

The results indicate: (1) that globally there are no major differences between the analysed categories of stakeholders in terms of level of meeting their interests; (2) level of fulfilment of stakeholders interests is affected by the industry to which the company belongs; and (3) that the level of fulfilment of stakeholders interests is affected by the country where the company is domiciled.

Taken as a whole, our study contributes to the analysis of the industry and country in stakeholder prioritization and emphasize the importance of this factors to understanding the stakeholder management and the corporate social responsibility.

Several paths of research could be proposed as complementary to this paper. Firstly, the current study could be extended by resorting to a larger sample and by conducting a multiple financial exercise analysis. Alternative research methods could also be used, such as conducting interviews with different stakeholder categories to test how they perceive organizational activities.

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MANAGERIAL CURRENT ISSUES IN THE CONTEXT OF ORGANIZATIONAL BEHAVIOUR IN TOURISM

Mădălina Lavinia Țală¹ and Olimpia State²

^{1) 2)} The Bucharest University of Economic Studies, Romania

E-mail: madalina.tala@com.ase.ro; E-mail: state.olimpia@com.ase.ro

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Abstract

The field of Organizational Behaviour (OB) has a particular importance in an industry such as tourism, where employees are a key resource. Understanding how they identify and respond to the main challenges is essential. Following the literature review, the authors agreed that there are three current challenges that employees with a leading role in tourism must face: leadership, stress and digitization. Thus, a qualitative research was carried out. The general objective was to observe the way in which the employees with management position understand these three concepts and what they have to say about them. The analysis of the answers led to conclusions such as: underlining the differences between leaders and managers, accepting stress as part of the work and identifying methods to combat it, insufficient knowledge of the concept of digitization. The results of this research will be the basis of a future study, which will provide more comparable information, easier to generalize.

Keywords

Organizational Behaviour, Tourism, Leadership, Stress, Digitization.

JEL Classification

D23, L83, Z31

Introduction

Tourism, as a phenomenon of modern times, exceeded the borders of the countries, being a promoter of complex development: from the local economy to personal development. Regarding the management of tourism companies, despite the fact that many are small businesses, the economic reality and the speed with which the influencing factors change, obliges the adoption of a much more complex behaviour in organizations, able to cope with these changes, without considerable losses of time, health or employees. The aim of this paper is to highlight the opinions of tourism managers on three current issues in the OB sphere: leadership, stress and digitization. Based on the common elements identified, conclusions will be drawn. These will be useful from at least two perspectives: on the one hand, other managers

will be able to relate to these aspects and, on the other hand, the conclusions will contribute to deepening the research, by establishing some benchmarks for future analysis.

About Organizational Behaviour and Tourism

As an academic discipline, Organizational Behaviour appears about half a century ago (Luthans, 2011). However, its indissoluble connection with humans makes some elements visible from the very beginning of civilization: an example could be religious leaders, who, through their abilities and actions, have produced similar effects to current leaders. The Industrial Revolution and the socio-economic development generated by it have increased the importance of the human resource. Even so, it took more than a century to draw any conclusions about how employees behave (Hawthorne studies). Gradually, there was a need to delimit the study of OB from the other disciplines: Organization Theory, Organization Development and Human Resources Management. Organizational Behaviour tends to be more theoretical and at a micro-level of analyse (Luthans, 2011).

Davis and Newstrom (1985) has defined OB as "the study and application of knowledge how people act or behave within organization. It is a human tool for human benefit. It applies broadly to the behaviour of people in all types of organizations such as business, government, schools and service organizations." A more comprehensive definition belongs to Johns (1997): OB refers to "the attitudes and behaviours of individuals and groups in organizations".

Robbins and Judge (2013) refers to OB as "a field of study that investigates the impact that individuals, groups, and structure have on behaviour within organizations, for the purpose of applying such knowledge toward improving an organization's effectiveness". Essentially, OB it is with people, about people and their experiences in a defined organizational context.

Although extremely complex and often chronophagous, OB (in fact, its understanding) can be a very valuable tool for organizations in their attempt to be successful in a very dynamic and competitive global market.

As a modern industry, tourism in 2017, covers 10% of world GDP, 1 of 10 jobs in the world, 7% of world exports (UNWTO and WTTC, 2018). With these figures in mind, it is easy to imagine how they relate to the field of humans: cultural variety, diversity, uniqueness. These are complex aspects and OB must face them, decoding and assisting the management in order to obtain the desired results.

Tourism is an area where OB can easily find its exemplification, due to the massive and direct involvement of people, both clients and service providers. The permanent networking with people for the purpose of providing tourism services generate multiple connections, often sensitive and based on trust. Furthermore, we are dealing with a lot of perceptions, attitudes and decisions, many of them related to the OB domain. To facilitate these connections and eliminate the frequent barriers (such as communication, culture etc.), managers need to be aware of the difficulties and problems arising from understanding and applying the various components of OB.

Organizational behaviour is based on the company's aspirations, ethics and goals. Ineffective leadership, poor work ethic or low employee morale, can be considered big problems in organization (Ayiekoh, 2013). Another author (Gade, 2013) classifies the challenges into five major categories according to their origins, as follows: demographic factors; diversification; technology; resistance to change; globalization. In Wicks opinion, (2018) the main challenges regarding OB are: diversity, ethics, technology and globalization.

Because in Romanian tourism field we cannot talk yet about the diversity of the workforce (in the sense of belonging to different nations) and because studies on the motivation and ethics of the employees have been already conducted (Buzea 2015, EY, 2017, Beiu, 2018, Oncioiu et al., 2018), the authors decided to direct the research to the following areas: leadership, stress and digitization.

In regard to leadership, most theoretical references begin from his differentiation out of management. Thus, if a manager is a person who acts in order to limit the choices and comply with a plan, a leader is seen as a person with unique approaches, who thinks outside the box and finds ways to solve dilemmas (Adair, cited by Pavelescu, 2014). A manager who does not have leadership qualities will always have problems with motivating and forming a team that works well together. Thus, a leader has the ability to make people happy with what they do, to feel that their work helps to achieve the long-term goal of the organization. He challenges employees to go beyond the basic level of efficiency and to try to reach their full potential. When appropriate, recognize their achievements and reward them. Perhaps most important, it treats mistakes as learning experiences (Kouzes and Pozner, 1998).

Another delimitation that other researchers make is that the leader has soul, passion and creativity, while the manager has mind, reason and perseverance. A leader is flexible, innovative and courageous, and a manager is rather consulting, analytical and authoritative (Bohoris and Vorria, 2008).

Concerning the relationship between leadership, tourism and OB, it can be concluded that in tourism, a leader is needed rather than a manager.

Stress has been playing a major role in organizations in recent decades. Cause to the onset of many diseases, stress is frequently felt in the professional activity. Although some level of it is natural, when it becomes excessive it can have a negative impact on productivity and performance. Stressed employees have low motivation and low productivity, and organizations in which they operate have less chance of success in a competitive market (Leka et al., 2003).

The hospitality industry sometimes subjects employees to difficult experiences: scheduling, working with people, laborious physical work, etc. All this leads to pressures and challenges, respectively the emergence of stress, which is proving to be one of the biggest problems encountered in the hospitality industry. (Lo and Lamm, 2005). Other causes of stress are delegations, the road to work and especially time spent in traffic. (Legrain et al., 2015). Employees may also be stressed by tasks that exceed their level of knowledge and skills, too large a volume of activity, deadlines or difficulties of integration into the group.

For Romania, the results of the 2017 National Stress Survey (Dynamic HR and Learning Network, 2017) reveal that the level of stress among Romanians is an increased one, with over 80% of the population showing symptoms of stress of a physical, emotional or social nature, which have a visible negative effect on the person's life. A worrying percentage can be observed in the sphere of emotional stress that reaches the accentuated level in almost 11% of the population. Behaviours that support or generate high levels of stress are those related to poor eating habits, fatigue, states of irritability and stress in relationships with others. Perhaps the most worrying result is that young people most often experience fatigue and exhaustion, depressing moods and stress in relation to others. As a consequence, the hospitality industry in Romania must pay attention to these aspects, in order to help its employees, if needed.

The newest of the three domains that will be approached in the research is the digitization, respectively the transition from the classical, analogical, to the digital processes (Abi-Saab, 2015). Digital means anything that could be viewed or accessed by gadgets or electronic equipment. More explicitly, digitization is the process of transformation / conversion at the level of a company of any analogical information or physical things (documents, images, sounds, signals, location data, identity cards, etc.) in digital format, so that they can be used through computer systems (data storage, platforms, applications, etc.). Applicability in organizations is reflected in the area of distribution, sales, financial, production, communication, etc. Among the digital products are: electronic invoicing, electronic signature, electronic archiving, cloud storage, Facebook page, company website, ERP solutions (Enterprise Resource Planning), CRM solutions (Customer Relationship

Management); ARP solutions (Advanced Planning and Scheduling); BI solutions (Business Intelligence), mobile digital applications for sales team management, e-commerce sales (selling products through an online platform - virtual store) (Encore Research, 2018).

Nowadays, people are traveling more than ever, with extremely different requirements and expectations. In fact, according to Forbes, the hospitality and tourism industry has been "completely turned on its head in recent years" by trends including mobile integration, Artificial Intelligence and chatbots, integration of the "Internet of Things", focus on data, online reputation and virtual reality (Hughes, 2018). Thus, ignoring digitization or using it only at the primary level can cause market problems for organizations. For managers, the issue of digitization is not only about the costs involved, but also how they manage to explain to employees the need for change.

Research: methodology, main findings and discussions

The purpose of this research is to find out information on the three aspects of the OB field from the Romanian tourism managers. The research is a qualitative, exploratory type. This implies interviewing a small number of people, the data being not statistically representative for the studied population. Regarding sample, the number recommended is 12. "For most research enterprises ... in which the aim is to understand common perceptions and experiences among a group of relatively homogeneous individuals, twelve interviews should suffice" (Guest et al., 2006). Qualitative research studies in depth: the motivations, the emotions, the perceptions, the feelings that cause people to act in different ways. It is based on the development of hypotheses for conducting quantitative research, in-depth understanding of the attitudes, opinions, beliefs, behaviours of individuals or groups of people (IMAS, 2008). The method used for this research is the interview, the process being the semi-structured interview. The only requirement was that the three issues must be discussed in the following order: leadership, stress and digitization. As for the sample, it was composed of 16 respondents with managerial positions in tourism organizations. Subsequently, the interviews were transcribed and they were analysed. The period of application of the interviews was November 15– December 15, 2018. They lasted on average 30 minutes. Overall, the students from the Master of Business Administration in Tourism, year II, 2018-2019, ASE Bucharest, appreciated the openness of the managers to provide correct information.

The centralization of the data, lead to the following distribution: 5 respondents from the field of accommodation units, 10 from the travel agencies, and one from an airline.

The respondents from the accommodations provided structured information on topics, as follows: *regarding leadership* – managers are close to their subordinates, trying to motivate them and to reach to their personal problems; the difference between leader and manager is known, "the manager only commanding, while the leader looks beyond these aspects"; regarding the mode of action and the abilities of a good leader, the following were specified: "to get involved in all activities and not to get back from nothing, and if there is any problem to offer help to the employees; to speak to people from equal to equal, but also to know how to prevail when necessary; to know how to motivate their employees and have the power to convince them; to make the employees trust in their manager, but also in themselves; to know how to communicate effectively "; leaders are hard to find; although the term "boss" is still used, managers prefer to avoid using the word "subordinate"; conflicts are solved by the manager's decision; learning from mistakes.

Regarding stress – managers perceive that employees have a moderate level of stress, justified by their low age and the environment in which they grew up (rural); stressful situations occur more often for front office staff or in situations where the workload increases, such as in the case of event tourism; for managers, stress is related to customer satisfaction, interaction with foreign tourists, permanent staff search.

Regarding digitization – there is some confusion about the term, overlapping in the opinion of some respondents with the technology, with the endowments; reservations through Booking platform are appreciated, visibility through Facebook page and website.

The respondents from the travel agencies had the following opinions: *regarding leadership* – decisions are made as a group, although sometimes, due to time pressure, this is not possible; trust is built on collaboration, openness and equality; motivation in work is crucial to success; the manager offers the possibility for the employees to take on the role of leader; awareness of their own qualities and defects; regarding the actions and the abilities of a good leader, the following were specified: “fairness, confidence in one's own strengths, decision-making power, empathy, communication, knowing how to organize and plan, passion, integrity, generosity, creative consistency, wisdom and openness are for study”; the difference between leader and manager: “the first one observes things and does not get involved directly and from heart, the second has a broader vision; the leader has a great openness to the team, is oriented towards mobilizing all the employees to achieve the common goal; the manager says: *you have to do*, the leader says: *we have to do*”; the major challenge for a leader is to reconcile everyone, everyone to be happy; customers, employees, management; “The difficulty of a leader is to harmonize the team and lead it to the final goal with the same rhythm and enthusiasm”; the most beautiful part for a leader is the teamwork that brings the expected results.

Regarding stress – the stress level is rated as average; the sources of stress are related to the clients who do not communicate the preferences and needs correctly, but also to the service providers that operate changes generating chain effects (overbooking, cancellations or changes of the flights), situations in which the volume of work increases, the stress from personal life, legislation changes, traffic; short-term effects of the stress: fatigue, mental exhaustion; long-term effects of the stress: decreased enthusiasm; some actions regarding stress management: raising awareness of the gravity of the situation and focusing on quick solutions, combining personal and professional life, ensuring a relaxing working environment, a flexible program, communication, better estimation of time under high traffic conditions, positive attitude; the association of the “dead-line” term with stress.

Regarding digitization – digitization allows a better communication with customers and also between employees; digitization makes work from home possible; it can provide the necessary frame for innovation; it represents a facilitator between information and creation of holiday packages; digitization is a way to collaborate and create, to receive feedback almost instantly; respondents are aware of its role, but are still at the beginning in terms of complex solutions, especially those involving large budgets; overlapping terms, even confusion: “digitization” and “technology”; digitization is seen as a natural progression, extremely useful for easing work, a factor that offers competitive advantage; however, it can sometimes be a form of stress, due to the resistance to change of some employees; it represents a challenge for managers, due to the speed with which it propagates; it changes consumer behaviour and transforms industries.

The respondent from the airline company stated the following points of view on *leadership*: the team is important, everyone must understand their role and be aware that only together the performance can be achieved; the success of a manager is reflected in the results, but also in the satisfaction of each member of the team; adapting the management style to each employee. *Stress* is managed through better forecasting and organization. Exceeding the most difficult times is done through good communication and mediation of conflict situations. *Digitization* implies partnering with a Direct Connect type distribution system, but also with global distribution systems. Also, they have an interface for programming applications that provides instant data regarding the journey, a website, a social media presence, a blog.

The respondents belonging to accommodations correctly differentiate the terms "manager" and "leader". Themselves, by the way they lead, have qualities of leaders. From the general questions (naturally occurred during interviews) resulted that the companies are facing an acute lack of personnel. In these conditions it is absolutely necessary that the superior be rather a leader than a manager. Often, approaching people and treating them as collaborators instead of subordinates generate motivation and ultimately commitment to the organization. As far as the travel agencies sector is concerned, the creation of united teams is essential. The teams must be able to solve current problems alone. From the specifications of the respondents it is easy to create a profile of the leader of a tourism agency. It includes features such as: fairness, confidence in one's own strengths, empathy, passion, integrity, generosity, creative consistency, wisdom and also behavioural aspect, such as: decision-making power, capacity for organization, planning, communication, openness to study. For the airline it is observed the use of the word manager, rather than leader. However, the focus falls on the team and on the individual satisfaction, seen as a motivator of the performance.

For the accommodations, the stress is related to the periods when there are groups of foreign tourists or events that require the team to do more than they do in a regular working day. Again, the staff problem appears as a key element in an industry such as tourism. In travel agencies, stress comes from both ends of the distribution chain: on the one hand customers who do not clearly formulate the requirements and on the other hand service providers (especially air transport or accommodation) who make decisions that directly and negatively affect clients of agencies. To manage stress it is necessary to truly understand its level and to anticipate, as far as possible, the delicate periods or situations for which it is imperative to have certain procedures created to facilitate the decisions of the employees.

As for digitization, this extremely active component of organizational life, it must be viewed with the confidence of facilitating many relationships between stakeholders. However, once the fear of change is overcome, frequent trainings and briefings should take place. Technology and digitalization, beyond the common elements that they have, need to be emphasized: it is not enough to have technology and digital solutions, if the employees use them incorrectly or not at all. It is noticeable that these interviewed companies are at the beginning of the digitalization era, but every one, according to the budget and the degree of awareness, is willing to invest in this field.

Conclusions

Through this research, the authors proposed to openly approach three sensitive, but extremely current areas of the OB of tourism companies: leadership, stress and digitization. Apparently different, these three areas are intertwined, the leadership component being the one that can make the two factors, one human (stress) and one technological (digitalization), have an appropriate and positive role in organizations.

The results of this qualitative research will be used for a new research that will take place during the academic year 2019 – 2020. Based on the information gained from this research, the authors will create an interview guide. General objectives will be formulated, such as: highlighting the differences between leader and manager in the tourism field, determining the characteristics of the tourism leader, identifying ways to anticipate and combat stress in the organization, appreciation of the way in which digitalization has entered the tourism companies, etc. Also, the term "digitization" will be clarified to avoid confusion with the "technology" one. Subsequently, the results will be used to carry out a quantitative research representative for the tourism field and / or its sectors.

The limits of the research are related to the small sample size and the type of research (qualitative). Thus, it is directly influenced by the person of the interviewer (in this case 16 different people), who by the attitude and manner of expression could have constrained and/or influenced the answers.

Without claiming to be representative for the entire tourism field in Romania, the paper makes significant contributions to the three areas analysed in the field of OB, leadership, stress and digitalization, being a solid starting point for future research (realized by the authors or by others).

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UNDERSTANDING SUSTAINABLE TOURISM CHOICES. A EUROPEAN NETWORK CASE STUDY

Anamaria Vrabie¹

¹) The Bucharest University of Economic Studies, Romania

E-mail: vrabie.anamaria@gmail.com

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Abstract

The scope of this paper is to assess how prominent European tourist cities envisage a sustainable tourism approach, one that manages to balance the needs of city residents and municipality, of tourists and of tourism industry. It gathers evidence from 10 European tourist cities that have formed in 2019 the “Tourism-friendly Cities” network under the European Union’s URBACT programme and are expected to work together until 2022 to develop local actions plans for supporting sustainable tourism practices. The first section focuses on a brief overview on the growing importance of the tourism sector for the local and global economy and the emerging challenges in cities, while the following section is looking on how cities are designing ways to address these challenges. The final section presents the implications and conclusions of these challenges and how they are experienced by this idiosyncratic group of cities.

Keywords

Sustainable tourism, public policy, local development, URBACT, European programmes

JEL Classification

Z32

Introduction

Tourism industry is one of the most important of our era. It drives wealth, employment and regional development, and it is expected to experience continuous growth (Pigram and Wahab 2015). Tourism, travels and related sectors account for 10.3% of GDP in EU and 11.7% of total employment (European Parliament, 2019). Similarly, at global level, in 2018, the industry helped generate 10.4% of world GDP and a similar share of employment, and has shown enormous resilience over the last decade. The EU welcomed 500 million international tourist arrivals (overnight visitors) in 2016, accounting for 40% of the world’s total (World Economic Forum, 2019). A long-term study by the World Tourism Organisation (UNWTO)

forecasts a growth in European tourism, to an estimated 744 million tourists (+1.8%), or 41.1% of the global market, over the period to 2030 (UNWTO, 2018).

Despite this positive economic outlook, the current growth model of the industry is hardly compatible with the quality of life of local communities, especially in cities or mature destinations (Andereck et al., 2007; Moscardo, 2009). In 2017, Venice, the city of 260,000 received more than 28 million foreign tourists. Barcelona, with its resident population of 1,625,137 received over 30 million tourists. The stark difference in numbers is not only relevant of how much space and amenities a city can offer. It also alludes to the difference between city residents and tourists or, using a different layer, resident taxpayers- consumers. In fact, a recent UNWTO report on overtourism in cities recognized the need for the sector to “ensure sustainable policies and practices that minimize adverse effects of tourism on the use of natural resources, infrastructure, mobility and congestion, as well as its socio-cultural impact” (UNWTO, 2019). This call for action is amplified by recent street protests in several European cities against the overtourism (the Guardian, 2017). As recently as April 2019, Amsterdam, Barcelona, Berlin, Bordeaux, Brussels, Krakow, Munich, Paris, Valencia and Vienna signed a joined letter addressed to the European Commission’s calling for legislative support for curving the “explosive growth” of global short-stay rental platforms (Amsterdam, 2019).

It is no surprise that cities are the forefront of the paradigm shift needed from the tourism industry. The urban scale provides the daily interactions where the tourism production system shows its effects and consequences. Local governments are committed to guarantee a balanced impact of tourism in urban areas and on local economies, conjugating the need of economic growth of all the different sectors involved in tourism (mobility, hospitality, culture, tour operators, gastronomy, etc.) and the well-being of temporary and permanent residents. At the same time, local governments need to cope with a sector whose trends are constantly evolving at global level, with the growing role of a series of companies and platforms active at global level on sectors as hospitality and transport, which show the effects of their actions on places as neighbourhoods, streets and buildings where only local governments can find innovative and integrated solutions.

In this context, the scope of this paper is to assess how prominent European tourist cities envisage a sustainable tourism approach, one that manages to balance the needs of city residents and municipality, of tourists and of tourism industry. While this section is focused on the growing importance of the tourism sector for the local and global economy and the emerging challenges in cities, the following section looks at how cities are designing ways to address these challenges. The final sections present the implications and conclusions of these challenges and how they are experienced by this idiosyncratic group of cities.

Research Approach

The current paper gathers evidence from 10 European cities for which the tourism sector is of key interest and that have won in June 2019 the European Union’s URBACT programme competitive process for developing an action-planning network. The 10 cities - Genoa (Italy), Venice (Italy), Rovaniemi (Finland), Utrecht (The Netherlands), Dún Laoghaire (Ireland), Cáceres (Spain), Braga (Portugal), Druskininkai (Lithuania), Krakow (Poland), Dubrovnik (Croatia)- have formed the “Tourism-friendly Cities (TFC) action-planning network and are expected to be working together on designing their sustainable tourism local action plans from June 2020- June 2022 (URBACT, 2020).

The evidence presented in this paper is based on the work that the author has conducted between September 2019 and February 2020 in the capacity of URBACT lead expert for the TFC network in order to develop a baseline study. The baseline study is meant to map the starting point of each city in the TFC project and co-design with city partners a working methodology for the period June 2020- June 2022.

The URBACT programme is a know-how programme that promotes exchange and learning between cities. Started in 2002, URBACT's mission is "to enable cities to work together and develop integrated solutions to common urban challenges, by networking, learning from one another's experiences, drawing lessons and identifying good practices to improve urban policies" (URBACT, 2014). In order to achieve this mission, URBACT programme's main work formats includes open call for network formation between cities interested in a similar challenge. Currently, there are three types of networks- action-planning, implementation and transfer. The action-planning network has been over the years the most utilised instrument within the URBACT programme. It allows cities to organise a process of exchange and learning among peers across Europe, with the goal to address a policy challenge shared by all cities through concrete action planning. The Tourism-Friendly Cities action-planning network was approved in June 2019, as part of the 23 action-planning networks that were selected after a competitive process at European level (URBACT, 2019).

The composition of the TFC partnership offers a strong balance between cities from more developed EU regions - Genoa (Italy), Venice (Italy), Rovaniemi (Finland), Utrecht (The Netherlands), Dún Laoghaire (Ireland)- and from less developed EU regions- Cáceres (Spain), Braga (Portugal), Druskininkai (Lithuania), Krakow (Poland), Dubrovnik (Croatia).

The partnership also reunites an unique array of city experiences and expertise, including elements which represent some of the main topics recognized by the contemporary debate on tourism: cities symbol of "overtourism" such as Venice and Dubrovnik, cities with UNESCO World Heritage Sites or Creative Cities (Genoa, Venice, Cáceres, Dubrovnik, Krakow and Braga), cities with spa tourism (Druskininkai), cities with religious tourism (Braga and Krakow), cities located close to main tourist destinations (Utrecht and Dún Laoghaire, respectively to Amsterdam and Dublin), cities with seasonal tourism (Rovaniemi and Dubrovnik).

Many of the partners are prominent actors of the debate on the impact of tourism in cities and some of them are already testing solutions such as imposing limits to the numbers of cruise ship anchoring the harbour (Dubrovnik), new dispersion techniques and strong awareness campaign targeting tourists (Venice) or ban on issuing new hotel urban planning permits (Utrecht), while others are dealing with the need of promoting sustainable tourism after dramatic events (as Genoa, after the Morandi bridge collapse) or in a wider action of contrast to climate change or global pandemic (as Rovaniemi, situated on the Arctic Circle, one of the areas of the world most affected by climate change, warming at a rate of almost twice the global average).

Other partners are conceiving tourism as a powerful leverage for economic growth and recovery from crisis in their regions (Cáceres, Braga and Druskininkai), while others are just recently including tourism as a relevant part of their local economies, but trying to manage the effects created by the sector on housing, retail, services and mobility (Utrecht and Dún Laoghaire).

After careful consideration of key strategic European policy documents (Europe 2020 strategy and the Urban Agenda of the EU), key strategic documents of local development available at every city level and online and offline consultations with city partners, four tiers of analysis emerged, to be further explored by the author using questionnaires and site visits: (1) governance structures; (2) importance of tourism for the local economy; (3) carrying capacity of the city of tourism flows and (4) balance of social, economic and environmental concerns. The following sections presents the main implications that resulted from the information gathered through questionnaires and interviews during site visits conducted during September 2019- February 2020.

Implications and conclusions

Analysing governance structures, the cross-sectoral nature of the subject and unstructured way in which cities are trying to grasp the phenomenon was revealed. There is a strong diversity of professional profiles that had the motivation to take action towards transitioning their current practices towards sustainable tourism ones. These profiles included public servants and external stakeholders from urban planning department, city /destination marketing and communication departments, local destination management organisations, housing department, local economic development department, culture and community engagement, port authorities, cultural heritage and tourism, European funds and International Affairs. Much more than breaking silos, it is about finding ways to bring varied stakeholders from academia, civil society, businesses and public administration to work together and co-design solutions.

Looking at the carrying capacity of the city of tourism flows, the fine line between a state of tourism-friendly and overtourism was highlighted. Random events (choosing a set scene for a movie blockbuster, a sudden spike in preference for health tourism, outbreak of the Coronavirus in a market significantly linked to the local one) or deliberate actions from the past (an open policy for economic growth and attraction of tourism from two decades ago, European incentives aimed for economic competitiveness from 15 years ago), as well as industry trends showing growth potential and increased importance of enabling technologies, can significantly influence the disruption that tourism can cause to the local economy and quality of life in cities. These states are not fixed ones, as they are strongly impacted by seasonality and by changes in sub-industries. This is why, partner cities found many cross-areas of learning and building practices together, as detailed further below.

Tourism-“friendly” state: Genoa, Braga, Caceres, Druskininkai, Dun Laoghaire, Rovaniemi, Utrecht

Overtourism state: Dubrovnik, Krakow, Venice

On the importance of tourism for the local economy, three competing logic of the three tiers (T1- city and residents, T2- tourists and T3- tourism industry) that interact in the limited and physical space of a city were revealed. This entails a change not only on the governance system, but in supporting structured dialogue with key stakeholders in order to align actions and co-create a common vision for development that can balance residents and tourism needs. Finally, on the balance of social, economic and environmental concerns, three subthemes emerged and further research questions, that the respondents would also like to address in the future work of TFC network. These are:

Subtheme 1: NIMBY - City and residents perspective

- How can we effectively collect and measure resident’s perceptions on tourists, limiting the bias from local media portrayals of overtourism?
- How can we avoid the NIMBY (Not In My Back Yard) effect connected to tourism?
- How can we support housing market to stay affordable?
- How can we capture value from sharing economy practices (AirBnB, Uber etc.) and digital platform (Booking.com etc.) in order to invest in local assets and neighbourhood improvement?
- How can we pay attention to gender sensitivity when undertaking small scale actions or designing routes/itineraries for tourists/visitors?
- How to make small scale actions friendly and accessible to vulnerable groups such as children, elderly, and less mobile people?
- How to persuade residents and the city council of the importance of sustainable tourism and Tourism-Friendly Cities?
- How to engage local citizens, stakeholders, and ULG members?

Subtheme 2: Rights and experiencing responsibilities- Tourists perspective

- How can we effectively collect and measure tourist's perceptions on sustainable tourism practices and willingness to pay/take part in these practices?
- What is the impact of (sustainable) tourism on other policy areas?
- How to empower and motivate tourists and visitors to take action?
- How to give space for reflection of actions that tourists should not only be consumers of a place or experience?

Subtheme 3: Global business with local impact- Tourism Industry perspective

- What defines sustainable tourism? How would a benchmark quantitative and qualitative value look for each of the TFC cities?
- What is the impact of (sustainable) tourism on other policy areas?
- What business models are local businesses using connected to tourism?
- What are the perceptions of risks from local businesses side for transitioning to sustainable tourism practices?
- What governance structure is needed for sustainable tourism to contribute in strengthening the local economy and community?
- How can we reward/signal good business practices?
- How to give space for reflection on the model of growth of the industry and its alignment with local development needs?

Going beyond the mere comparison of experiences and good practices, TFC partner cities acknowledged their main common challenges revolved around testing new governance models and being able to listen to stakeholders beyond the usual suspects/powerful lobby. This is why, all partner cities found valuable expertise to share, that can be adaptable and replicable also by cities of different size or affected by different types of tourism and inform each of the development processes of their future local action plans.

It is important to note that the information presented here was gathered before the outbreak of the COVID19 pandemic. Although the implications of the pandemic will be significant for the tourism sector, cities will still face challenges around the decision-making process of prioritizing actions for sustainable tourism (in the current context, this might mean actively supporting tourism activity) between conflicting visions and interests of the three tiers - the city and residents, tourists and tourism industry.

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UNDERSTANDING URBAN MOBILITY CHOICES. A ROMANIAN FIELD STUDY

Anamaria Vrabie¹

¹⁾ The Bucharest University of Economic Studies, Romania

E-mail: vrabie.anamaria@gmail.com

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Abstract

The scope of this paper is to present potential directions for improving the design and implementation of evidence-based practices on policies involving behaviour change related to travel choices in Cluj-Napoca. Cluj-Napoca is currently implementing a local strategy focusing on the transition to sustainable mobility. This is aimed to decreasing CO2 emissions, as well as influencing resident's behaviour to opt for alternative transportation modes and discourage car usage. In the first section, the paper explores why there is growing evidence that both standard economics, as well as behavioural economics approach are necessary for achieving public policy objectives of transition to sustainable urban mobility. The second part explores the design of a field experiment in Cluj-Napoca aimed for assessing if the desired behaviour (less car usage) is easy to adhere to. The final section discusses the results of the field experiment and offers considerations on how local policy makers should integrate these type of surveys in their evidence-based approach on changing travel behaviour of city residents.

Keywords

Urban mobility; choice architecture; behavioural insights.

JEL Classification

R11, R41, R48

Introduction

Urban congestion throughout the European Union (EU) maintains high values (European Commission 2016), in addition to the already worrisome situation where road transports generate 71.7 % of the EU's greenhouse emissions (European Commission 2019). In this context, the new European "green deal" seeks to reduce 90% of greenhouse emissions in transport by 2050. This policy target is an ambitious continuation of the European Union's strategy (Europe 2020) objectives, that proposed for the period of 2014-2020 a reduction of greenhouse gas emissions of 20% compared to 1990. Monitoring the achievement of this goal is still under way.

The European Commission has developed a guidance for local and national authorities in all member states to be followed in order to support the European Union's effort to transition to sustainable mobility. The Sustainable Urban Mobility Plans (SUMP) represent a roadmap for strategy development concerning urban mobility (Rupprecht consult (editor), 2019). Moreover, SUMP are required at local, regional and national level as a precondition to access any European structural funds related to road infrastructure and mobility.

Romania, as a EU member state, has supported the development of its first SUMP for the 7 most important urban areas. To this end, it has contracted external expertise from the European Bank for Reconstruction and Development to support the country's most important 7 cities to develop their first SUMP.

Cluj-Napoca has developed its first SUMP for the period 2016-2030, acknowledging that it needs to reduce car usage in the city and its metropolitan area (ARUP, 2015). The Cluj-Napoca SUMP does not contain information on commuter patterns and behavioural insights on travel choices of Cluj-Napoca residents. There is an ever growing number of studies noting that a transition to sustainable mobility is unlikely if technological improvements and changes in the built environment are not combined with behavioural change (Avineri, 2012; Metcalfe and Dolan, 2012);

This is why the objective of this paper is to present potential directions for improving the design and implementation of evidence-based practices on policies involving behaviour change related to travel choices in Cluj-Napoca. The first part of the paper explores the standard and the behavioural-approach of influencing travel options. The second part of the paper describes the field experiment designed to understand whether Cluj-Napoca needs now the standard or the behavioural-approach for influencing less car usage, in line with sustainable mobility goals. The third part presents the results and conclusions of the field experiment.

Literature review

Travel can be regarded as a series of short term choices on how to reach destinations and participate in daily activities. Both availability of travel options, as well as urban form, are significant determinants for how individuals set up daily routines of departure time, route choice, destination and travel mode (Axhausen and Gärling, 1992; Ettema and Timmermans, 1997; Haegerstrand, 1970).

The standard approach to influence a travel option over another in order to reduce congestion has been to influence the demand. For example, road pricing and parking policy can make car usage expensive and discourage drivers to take this option into consideration. The caveats of these interventions are however growing concerns on social equity (Giuliano, 1994) and acceptability (Eriksson, Garvill, and Nordlund, 2006). Other transportation demand-based solution includes land use planning policy, proactively trying to decrease car daily travels through promotion of a compact way of living, where housing, work, day-care, schools and other amenities are available within a walking radius or accessible by public transportation or alternative transportation (bikes, scooters etc.). The pre-existing structure of some cities, especially historical ones, makes this solution particularly hard to be considered.

Because of the limitations of each of these policy interventions, in recent years, a growing number of studies have indicated the importance of interventions focusing on behavioural change towards the transition to sustainable mobility change (Abrahamse et al., 2009). A few studies in transport studies literature have begun to explore the link between transport and subjective well-being (SWB) (Abou-Zeid and Ben-Akiva, 2011; Duarte et al., 2010; Jakobsson Bergstad et al., 2011). While results are inconclusive on the potential effect of travel on people's overall evaluation of their lives, commuting from home to work has been shown to be one of the least enjoyable activities during the day (White and Dolan, 2009).

Thus, the choice of travel mode is also influenced by attitudes towards the travel alternatives. Work related journeys are mostly judged by their utilitarian attributes, while for leisure journeys both utilitarian and affective factors are equally important (Anable and Gatersleben, 2005). Yet, cars are a typical conspicuous good that signal wealth (Dargay, 2001; Hirsch, 1978), and provide wider psychological and social benefits, such as mastery, self-esteem, feelings of autonomy, protection and prestige (Ellaway et al., 2003; Mokhtarian, Salomon, and Redmond, 2001; Steg, 2005). These affective factors give the car a comparative advantage over public transport (Steg, 2003). Conversely, Stradling, Anable, and Carreno (2007) found that satisfaction with public transportation depends on factors such as cleanliness, privacy, safety, convenience, stress, social interaction, and scenery. In addition, Abrahamse, Steg, Gifford and Vlek (2009) reported that positive feelings associated to the car reinforce its use, while negative ones such as guilt and disappointment predict intentions to use public transport. Personal norms remain however an important determinant of car-use reduction (Nordlund et al., 2003).

Living the present moment at the expense of tomorrow, also known as hyperbolic discounting, might also cause people to overlook certain long-term outcomes which might require them to make a sacrifice in the present (Laibson, 1997). People's saving behaviour falls under this category (Ianole, 2014) as well as changing a present behaviour, on account of a distant challenge, such as environmental concerns of car usage (Hardisty and Weber, 2009).

Commitment to a certain travel mode might also be determined by habits. Owning a car or having a monthly pass for public transport are pre-commitment mechanisms to a particular travel mode (Simm and Axhausen, 2001). Such commitments inform past behavior (habits) and might also incur several biases, such as status quo or endowment effect, when making new decisions for travel mode for a new short distance trip or connected activities (parking). Individual reference point might also explain the participants' choice for the particular mode of transport. Reference points matter in shaping people's preferences (Ianole, 2017) and can be very important in modelling and predicting behavior in transport networks (Avineri, 2006). Moreover, public transport users have been found to be more risk adverse than car users with regard to expected travel time and travel time variability (Bates et al., 2001; de Palma and Picard, 2005; Noland and Polak, 2002).

Methodology

Before understanding Cluj-Napoca's residents biases towards voluntary reduction of car usage and other measures to support the transition to sustainable mobility, we wanted first to understand what transportation method is the most efficient, time-wise, for daily commutes in the city.

We developed a field experiment to measure the efficiency of four modes of transport: public transport, bike, private car and walking. A team of 22 students from the Sociology Department of the University Babes-Bolyai was asked to collaborate for this field experiment as part of their applied research projects. The students were split into teams and asked to cover certain origin-destination routes using the bus, the bike, private car and walking. Each team covered 3 different origin-destination routes during the morning rush hour.

The design of the field experiment followed this structure:

- Choice of origin and destination points. A popular destination point in the city center of Cluj-Napoca was chosen to match the regular morning commute of parents with children. This was "Nicolae Balcescu" primary school and high school, one of the best-rated educational facilities in the city, that accommodates both primary education and high school education levels. Although for primary school the law states that only children living in close proximity of the school are eligible for enrolling, the reality shows that pupils live at significant distances from the school. Thus, 21 points signalled by representatives of the school as the neighbourhoods where most of the pupils live were chosen as origin points.

- Choice of time and date. The morning rush hour was chosen (between 7 and 8 AM) and the field experiment was conducted on Friday, June 8th, 2018.
- Data measurement. Students were asked to mark on an observation sheet the time of their departure and arrival.
- Availability of modes of transport. To conduct the experiment, a ridesharing company for Cluj-Napoca borrowed us three cars. Students that already had valid public transportation passes were assigned for the bus routes, students willing to ride a bike were assigned the cyclist routes and students comfortable with walking tested the pedestrian routes.

Results

The diagram below summarizes the results of our field study. In the first column, it highlights the number of minutes with which the car is more efficient to reach the destination in comparison with the bus (black scales). The second column highlights the number of minutes with which a bike can reach the destination in comparison with the bus- black if it is more efficient, red if it is not. The last column highlights the number of minutes needed to reach the destination walking in comparison with the bus- black if it is more efficient, red if it is not.

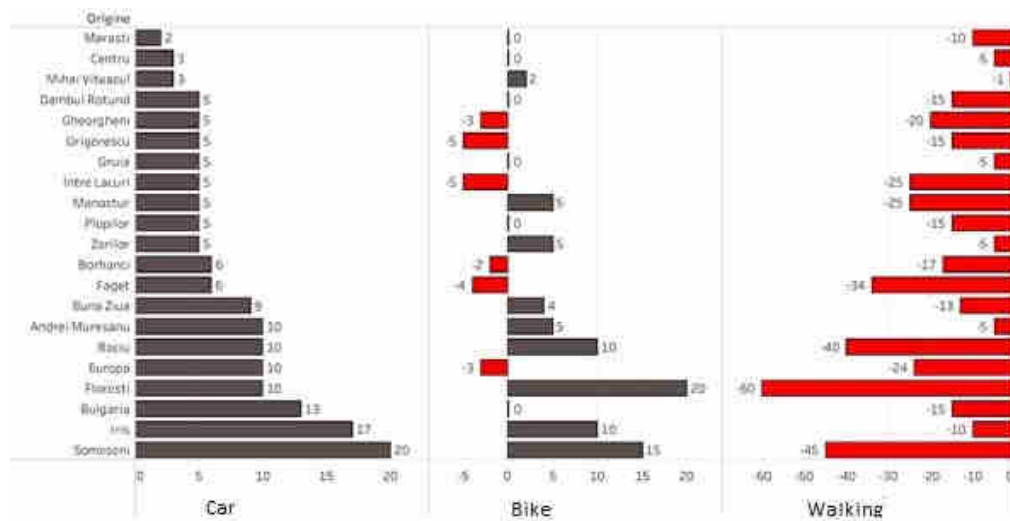


Fig. no. 1 Comparative timings relative to the bus for reaching the “Nicolae Balcescu” High school between 7-8 AM starting from various neighbourhoods in Cluj-Napoca.

Source: Vrabie, Anamaria, Norbert Petrovici, Titus Man, and Codruta Mare. 2018. 'Pactul de Mobilitate'. Cluj-Napoca: Divizia de Inovare Urbana Cluj-Napoca.

The main conclusion revealed by the field experiment are:

1. The commute by car is faster than the one with the bus. No matter the original neighbourhood the departure, in rush hour traffic conditions, reaching the destination was faster by car, rather than public transport. Cars were faster on average with 7.5 minutes than the bus, making this transportation mode the most efficient (time-wise) way for commuting.
2. For short distances, bikes provide the same conditions for commuting as buses. On longer distance however, one can reach the destination point faster than the public transportation. The ride is however more dangerous, as there is still insufficient dedicated infrastructure for bike lanes in the city.
3. Walking scores as the slowest transportation mode, as one could expect, especially on longer distances.

Conclusions

The scope of this paper was to present potential directions for improving the design and implementation of evidence-based practices on policies involving behaviour change related to travel choices in Cluj-Napoca. Cluj-Napoca is currently implementing a local strategy focusing on the transition to sustainable mobility. This is aimed to decreasing CO₂ emissions, as well as influencing resident's behaviour to opt for alternative transportation modes and discourage car usage.

In order to effectively achieve behaviour change, public policies need to have documented evidence that the behaviour they are expecting to influence has the enabling environment to be followed. In other words, that it is easy and accessible to adhere to the desired behaviour. This is why, this paper focused on verifying which transportation mode is currently most efficient (time-wise) in Cluj-Napoca. Based on the results of the field experiment that informed the current paper, the car is still the fastest transportation means in Cluj-Napoca, while public transportation lags behind, especially on certain routes. Until the implementation of this field experiment, Cluj-Napoca did not have such comparative data in conditions of real traffic available, matching real commuter routes that residents are likely to engage in daily. It is important to note however the current limitations of the field experiment. In this study we did not take account the time required to find parking, which generally adds to the overall time of using the car as a transportation means.

Changing habits around travel choices required consideration on many behavioural aspects such as personal reference points, attitudes, commitments, but most importantly, needs to be able to deliver on the promise that the proposed alternative is better. In our case, that public transportation is a faster and more efficient way to commute.

Surveys as the one presented in this paper should be done on a regular basis by local policy makers, in order to be able to assess in real time the complementarity of other policy interventions, such as increasing parking tariffs, making priority lanes for buses or extending infrastructure for (alternative) transportation. Only in this way a strengthen capacity for evidence-based practices on policies aiming for behaviour change related to travel choices can be supported.

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GENDER TYPOLOGIES ON EUROPEAN LABOUR MARKET

Cristina Boboc¹, Simona Ghiță², Andrada Olteanu³ and Valentina Vasile⁴

^{1) 2) 3)} The Bucharest University of Economic Studies, Romania

⁴⁾ Institute of National Economy, Romanian Academy

E-mail: cristina.boboc@csie.ase.ro; E-mail: simona.ghita@csie.ase.ro;

E-mail: andradateodora133@gmail.com; E-mail: valentinavasile2009@gmail.com

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Abstract

Women and men often have very different labor market experiences. Women are often assigned disadvantageous roles/positions compared to men, being paid less per hour, working fewer hours outside the home, and entering different occupations than men. These labor-related gender discrepancies may lead to a perpetuation of inequalities in other areas: general welfare, pension security and health, etc. Starting from this aspect, the present paper aims to analyze the particularities of women's role, position and behavior in the labor market at European level and to identify the factors that lead to the persistence of labor gender differences. A clustering of European countries is carried out in order to identify the main typologies of countries regarding women's participation profile in the labor market, under the impact of drivers related to the life style, cultural-religious values, legal practices and gender role-sharing. The research was carried out on statistical data provided by Eurostat, covering 29 European countries. The first typology is characterized by approximately the same contribution of both sexes to the economy, but they differ in their involvement on labour market. Women often work on short-term and/or part-time contracts and in large companies. The second one is characterized by similarly involvement of both sexes on the labour market: women work in small and medium sized companies and many women are entrepreneurs. The third one is characterized by a higher contribution of men to the economy: men are employed with unlimited employment contracts and are better educated than women, and most entrepreneurs are men.

Keywords

Gender inequalities, labour market, European countries, multivariate methods.

JEL Classification

J16, J21, J31

Introduction

After the Second World War, there was an increasing participation of women in the labor market, explained by many factors: reversing the roles of the two genders ("*quiet revolution of gender roles*" - Goldin, 2006); the facilities created by technology enhancing the flexibility of labor relations (Greenwood, Seshadri and Yorukoglu, 2005); access to birth control services (Bailey, 2006; Bloom, Canning, Fink and Finlay, 2009) and economic development level (Pampel and Tanaka, 1986). The participation of women to a greater extent in the workforce has had consequences both in society and in the labor market. In terms of work, the consequences were increased employment, flexible working hours, new patterns in industrial relations (Daly and Rake, 2003). Initially, there was a negative correlation between the fertility rate and women's participation rate in the labor force, but this was reversed, becoming positive (at least in the European Union) (Amaral et al., 2013). All this led to women's financial independence, accompanied by a greater independence in the workplace (especially in the case of women with tertiary education) and a reduction in the gender pay gap.

The women's role in family and society is also influenced by the existing prejudices, largely generated by the cultural-religious ideology. Religion promotes respect for the classic, traditional roles of women and men. Studies have shown a decline in the religion-influence on women's role in family and society, more pronounced in Scandinavian countries than in Central-European countries. Southern European countries (Italy, Greece) have remained more coupled with old traditions, here being noted a lower participation of women in the labor market (Inglehart and Norris, 2003).

Some specialized studies have revealed the existence of significant differences between the two genders, regarding the typology of the contractual labor relations. Women are more inclined to part-time work, to a flexible program ensuring a balance between career, work and family life. Petit and Ewert (2009) and Mc Call (2001) have shown in their research that lower quality jobs, more vulnerable, often informal (lower paid, which require lower professional skills and knowledge, as well as an inferior educational background, sometimes with no written labor contract, with non-compliance of the labor law) have a predominantly female addressability. The explanation of this situation lies in the employers' expectations regarding the temporality of women's presence and involvement in the labor market, as a result of assuming their obligations of raising and caring for the children or of taking over the household chores, situations accompanied by wage reductions and career stagnation, in the case of young women (Black et al., 2008).

It is a well-known truth that certain occupational areas are addressed especially to men, due to some characteristics of the work (Ibanez, 2017). Boushey and Cherry (2003) show that in the US in the 1960s only one in seven jobs in engineering sector were employed by women. In terms of education, women are better placed than men, more women being enrolled in tertiary education (Schofer and Meyer, 2005), and female graduation rates outpacing those of men. This does not mean that women outperform men in any area of tertiary education, there is also gender segregation in some fields of study. Women are underrepresented in engineering, mathematics and computer science, while education, humanities, social sciences, law and health are favorite areas of women (Vincent-Lancrin, 2008). This behavioral pattern of women in choosing the field of study may have consequences on the potential earnings in the labor market (Manchin and Puhani, 2003).

In many cases, the existence of invisible barriers to women's career promotion has been reported (the "*glass-ceiling*" phenomenon - Rath, Mohanty and Pradhan, 2019), with women being restricted to access to well-paid jobs, which keeps them at the lower part of wage distribution, and the womanly dominated domains offering lower wages than those dominated by men. This phenomenon has been reported in Europe and Australia (Kee, 2006). In some industries, there is a lower presence of women in leadership, top-management positions,

including in academia or in law, the share of women decreasing with the ascension on the hierarchical professional scale (Blau and Kahn, 2016; Blau et al., 2014).

The involvement of women in labor-related activities also carries the imprint of the particularities of feminine life cycle. Thus, in the years of youth, women are the first to manifest their independence by detaching themselves from the parental home (EUROSTAT, 2017) and also those who hold a higher share of tertiary education graduates. They therefore enter with some strength points in the work process. Marriage, however, also comes with assuming the role of childbirth and parenting, household maintenance, all acting as a brake on professional promotion and remaining behind men in the career plan, as a professional position and income. As children grow, women return to the labor market with greater involvement, trying to reconcile family and professional life, but they can no longer recover the men's advance, remaining behind them.

The present paper aims to identify the main typologies of countries regarding women's participation profile in the labor market, under the impact of factors related to the lifestyle, cultural-religious values, legal practices and gender role-sharing.

Are there gender employment typologies among European countries?

In order to analyse the differences between European Countries in female employment compared to male employment, the research was carried out on statistical data provided by Eurostat, covering 29 European countries, for 2014 (the last year with all available data).

Data and methodology

The variables included in this analysis cover all areas where there were observed gender differences in previous studies. There were constructed new variables as gender differences for the following indicators: employed population and wage by the form of employment - full time (FTD, FTWD) or part time (PTD, PTWD); employed population and wage by the type of employment contract - limited (LCED, LCWD) or unlimited employment (UCED, UCWD); employed population and wages by age - less 30 (YOUNGD, YOUNGWD), between 30-49 (MATURD, MATURWD) or more than 50 years old (OLDD, OLDWD); employed population and wage by company size - small (SED, SWD), medium (MED, MWD) or large enterprises (LED, LWD); employed population and wage by education level - without tertiary education (HED, HWD) or with tertiary education (TED, TWD); employed population and wage by seniority in the company - less than 15 years (ENTRYED, ENTRYWD) and more than 15 years (SENIORED, SENIORWD), the number of days off (DAYSOFFD), the number of hours worked per week (HOURS), the share of self-employed in employed population (SELFED). We have included in analysis the employed to total population ratio (ER). In order to define patterns of female participation on the labor market there are applied the methods of multidimensional statistical analysis: principal component analysis and hierarchical and non-hierarchical cluster methods. For computations and graphical representations, we have used EXCEL and IBM SPSS.

Results

By applying principal component analysis three new variables are constructed, explaining about 70% of the total inertia (Fig. no. 1):

- **Wage differentiation component** (explaining about 42.3% from inertia) is positively determined by the differences in wages between males and females such as: the difference between the two sexes in terms of salary for Full Time employees, salary for age groups 30+ years, salary for employees for an unlimited period, salary according to education level and seniority in the company, the difference between the two sexes in terms of number of vacation days per year and the number of hours worked per week.

- **Employment differentiation component** (explaining about 19.3% from inertia) determined by the difference between males and females in employment such as: in a positive sense by the difference between the two sexes in terms of the number of employees under the age of 30, the number of employees in small companies (under 50 employees), the number of employees with lower education, the number of employees with small seniority in the company (under 15 years) and in the negative sense by the difference between the two sexes in terms of the ratio between the employed population and the total population, the number of employees over 50, the number of employees with higher education (from ISCED level 5 upwards) and the number of senior employees in the company (over 15 years).

- **Other features differentiation component** (explaining about 7.9% from inertia) determined mainly by the difference between males and females in other features of employment such as: in a positive sense by the difference between the two sexes in terms of the number of part-time employees, the salary for part-time employees, the salary for young employees under the age of 30, the number of employees in large companies (with over 500 employees), the number of employees with an unlimited employment contract and in a negative sense by the difference between the two sexes in terms of the number of full time employees, the number of employees with a limited work contract, the number of vacation days per year and number of hours worked per week.

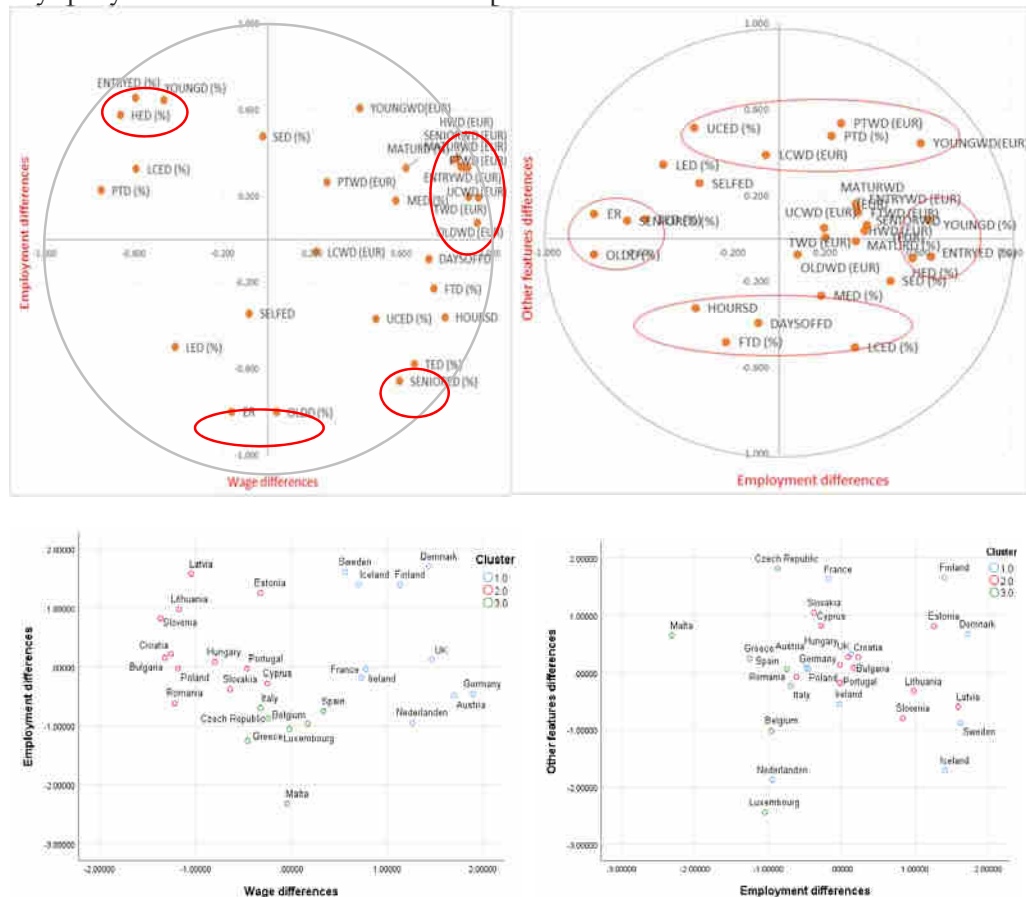


Fig. no. 1 Results from Principal components analysis and Cluster analysis

Source: authors computations in SAS Studio

By applying hierarchical and non-hierarchical clustering methods there are identified three models among European Union countries:

- **Model 1** is specific mostly to Northern countries (Sweden, Austria, United Kingdom, Ireland, Iceland, Holland, Germany, France, Finland and Denmark). Genders has about the same contribution to the economy (in terms of employed population), but they differ in their involvement on labour market:

- men work mostly full-time, in medium-sized companies, take more days off, but they also have many more hours worked than women, and their salaries are significantly higher than those of women in all the analysed segments. Men have a higher share of mature people who are employed (over 30 years old).

- women are usually found working part-time, with limited employment contracts, in large companies (over 500 employees) usually more permissive with the hectic schedule of new mothers).

- **Model 2** is specific mostly to Eastern European Countries (Latvia, Lithuania, Cyprus, Slovakia, Estonia, Slovenia, Portugal, Poland, Croatia, Romania, Bulgaria, Hungary), men and women are being similarly involved on the labour market with the following differences:

- women, up to 30 years old are employed in small and medium-sized companies, with larger seniority in companies and better educated than men. Women entrepreneurs are more numerous than men.

- men are employed mainly in large companies.

- **Model 3** is specific mainly to southern European countries (Czech Republic, Italy, Belgium, Spain, Malta, Greece, Luxembourg), where contribution of men to the economy is higher than for women and employed men are much more numerous than women for the age segment “over 50 years”. Men are employed with unlimited employment contracts, are more stable in the company and better educated than women. Most entrepreneurs are men.

Synthesizing the characteristics of the three models and calculating the number of variables with low, medium and high intensity for each cluster, as well as its predominant characteristic (Table no.1), it is observed that in the first model the vast majority of the variables show a big difference between the performance of men versus women, the countries being considered masculine, men having a much greater contribution to the economy than women and higher wages. The second model is characteristic of countries with the smallest differences between men and women, with both sexes making about the same effort in the economy and wages becoming about equal. The third model is specific to the countries situated in performance between the two groups mentioned above, with differences between men and women in employment type.

In terms of contract types there are some subgroups of countries:

- Czech Republic, France and Finland where men are in higher proportion with unlimited employment contracts and the number of hours worked per week is much higher than for females.

- Netherlands, Iceland and Luxembourg where women are in higher proportions in jobs with permanent contracts, while men are more numerous with limited employment contracts.

-

Table no. 1 Synthesizing the characteristics of the models

Model	Number of countries	High differences	Medium differences	Small differences	Predominant feature
1	10	17	8	4	Masculine
2	12	6	5	18	Feminine
3	7	6	16	7	Neutral

Source: authors computations

Conclusions

The income gap between the genders at the macroeconomic level has been debated and is still a major topic addressed by many researchers. Many analyzes aimed to explain this phenomenon, trying to reduce confusion and eliminate the wrong conclusions that women continue to be paid less than men in the 21st century due to sexism and discrimination. Although the discriminatory factor is very difficult to analyze, this paper wanted to show that there are many phenomena that occur on the labor market that lead to differences between the two genders by defining some typologies of countries regarding women's participation on the labor market.

In Western and Northern developed countries (Sweden, Austria, United Kingdom, Ireland, Iceland, Holland, Germany, France, Finland and Denmark), both men and women are involved on the labour market but women tend to prefer jobs that allow them to devote more time to raising children. In these countries, women prefer part time jobs and/or limited employment contracts, on large companies, known as being more permissive in connection with a more flexible program. Women tend also to have on average more vacation days and fewer hours worked per week than men. All these factors lead to large income differences between the two sexes.

Central European and Baltic countries (Latvia, Lithuania, Slovenia, Romania, Poland, Croatia and Bulgaria) have the smallest gender pay gap. Women are better educated than men and female entrepreneurs are more numerous than men. While women prefer small and medium enterprises, men prefer large enterprises.

In Southern and some Western European countries (Italy, Spain, Malta, Greece, Luxembourg, Czech Republic, Belgium) men have higher contribution to the economy than women. They are better educated than women, they prefer large enterprises and male entrepreneurs are more numerous than women.

Although we are in the 21st century and the opportunities of women in the labor market have changed and they could work in government and other big corporations in management positions, being lawyers, doctors, teachers, engineers or soldiers, women tend to participate in jobs feminine predominant. Women are more involved in jobs that are more communicative and networking, in positions such as teachers or educators, assistants, civil servants or in departments such as Human Resources, Marketing and Public Relations. This difference in preferences is reflected at the macroeconomic level in the gender income gap, not necessarily meaning that women are discriminated against men, but only that their functions usually have lower pay. Moreover, the common and traditional belief that the woman is the one who looks after the child and the household persisted this century too.

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THE IMPORTANCE OF THE REGIONAL OPERATIONAL PROGRAM IN THE REGIONAL DEVELOPMENT OF ROMANIA

Vasile-Ionel Popescu¹, Bogdan Georgescu², Irina Albăstroiu³
and Liviu-Constantin Popescu⁴

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

⁴⁾ *The Bucharest Technical University of Civil Engineering, Romania*

E-mail: ionelpopescu@gmail.com; E-mail: georgescubogdanmk@gmail.com;

E-mail: irina_albastroiu@yahoo.com; E-mail: popliviu86@yahoo.com

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Abstract

The European Union's enlargement on 27 member states gave rise to discussions on the issue of the social and economic internal competitiveness. The competitiveness will increase the risk of the existing gaps between the states and different regions. These gaps are from the structural deficiencies of key factors of the competitiveness, which means inadequate human capital and the lack of infrastructure. These key factors are followed by the insufficient capacity of innovation and business support and a low level of environmental protection. The Regional Operational Program (ROP) 2014 – 2020 is the successor of POR 2007 – 2013 and is one of the programs from Romania to access European structural funds from the European Fund for Regional Development (EFRD), period 2014 -2020. Through this program, is intending to reduce the disparities between different regions of the country and to approach to the European standards.

Keywords

Cohesion, regional, program, structural, funds.

JEL Classification

O10, O20, O47

Introduction

The European Union is one of the most promising regions in the world, but not all the European citizen have the same benefits and chances in terms of economic and social life. The difference is made by the area they are living – if is a strong develop area or a poor one, an area in a continuous economic expansion or an economic decline, an urban or rural one, at the East or West of the European Union. In these conditions, the European cohesion is

necessary, being also one of the main objectives of the European Union.

The economic and social cohesion policy of the European Union is, before of all, a policy of solidarity. The main scope is to promote a high level of competitiveness and a high level of work occupation, by offering financial support to the low develop regions and to those that are facing structural issues. It ensures that the reliable and durable development at the EU level and an optimal function of the Internal Market. The regional policy is based on financial solidarity, which means a distribution of the Community budget realized with the contribution of Member States, to the poorest regions and social vulnerability groups.

In the same time, European Union is confronting an accelerating process of an economical restructuration from the international globalization, opening international market and technological revolution, ageing population and a high level of immigration population.

For the purpose of the Treaty regarding the objectives of the European Union, the actions which will be funded by the EU budget, for the cohesion policy, must become a result of the sustainable growth, increasing competitiveness and increasing occupation degree.

The cohesion policy has a strong character in the field of research and it is important that it contributes to the objectives for other policies of the Union - such as the agricultural policy, the social policy and the policy for the environment protection.

1. The policy for regional development

The concept for regional policy is define in the European Union as an ensemble of structural policies designed to assure the reducing level of disparities and the elimination, in perspective, of disparities from different regions from member states (Uniunea Europeană, 2020).

The policy of the European Union's regional development has its origins in differing degrees of inequality in the area of geographic distinction. It is better to say that the most ten flourish regions of EU are three times richer and they are investing three times more in their unit of production compare with the most ten low developed countries (Ionescu and Toderas, 2007). This problem has been attributed to the widening of the Union, which has the power to name 27-member states of the world, which is a community and an internal market of 493 million citizens, which causes the economic and social inequalities in this state and the whole 271 regions (Uniunea Europeană, 2020).

The essential objective of the Regional Policy is the realization of the economic and social cohesion of the European Union, being at the same time an important instrument in the crystallization of the European identities. Cohesion is defined and reaffirms the importance of reducing gaps regarding the level of development between regions and to support of those remaining behind to evolve. The base idea in spite of the cohesion policy, it is that the economic disparity affects the sentiment of the community which aspires to be in the European Union. Moreover, disparities in countries or regions can determinate greater tensions since they are rich and poor in a particular geographic area, partly because of the exuberance of a nationalist stench in European space. Principles of these policies and goals of the European Union's main fallow to promote economic and social progress and to eliminate the differences that exist in the standard of living on the different regions and Member States (www.ier.gov.ro).

EFRD redistributes the community budget to productive economies (in terms of job creation and sustainability in some sustainable jobs) and in infrastructures (Miclăuș, 2000).

An important moment in the development of regional policy has been the adoption of the Single European Act, in 1986, which introduces the concept of economic cohesion – which means the elimination of economic inequalities in different areas - and the assumption of a policy of economic and social cohesion as self-contained policy and having the purpose of facilitating adherence to the single European market of southern European countries (Pușcașu, V., 2000). In February 1988, the Council of Europe gave Bruxelles the support of the funds to solidarism, to make funds available to the European Union and now called Structural Funds

- a more precise allocation of which is now available in the Community budget. It is officially recognized and officially declared the importance of this instrument in the development of regional disparities at Community level.

In 1994, a new structural fund, the fourth one, Financial Instrument of Orienting in the Fishing Area (FIOFA - IFOP), was set up, through the pool of all Community instruments on the fleet exits. The FIOFA was created to the EU development to the north, with the accession of Finland and Sweden in 1995. At the same time, the Advisory Committee set up by the Treaty of Maastricht, acting as an adviser on the process of deciding and supporting the European Commission in the activities of the Regional Development Agency, is active (Pușcașu, V., 2000).

The reform is a very important goal of combining Community assistance through these funds together with the simplification and de-centralization of their management. An important novelty of the Phare program is the two tools of the project - ISPA (Instrument for Structural Policies for Pre-Accession) and SAPARD (Special Accession Programme for Agriculture and Rural Development), which promote the economic and social development of the countries Candidate from Central and Eastern Europe (Miclăuș, 2000).

A new (and last) instrument of solidarity was carried out in 2002 following the major floods suffered by the countries of Europe, with the aim of integrating in the case of major natural disasters and repercussions on the conditions of living in a refugee affection, on the environment or on the economy.

The Committee of the Regions is composed of representatives of the regional and local authorities, which reflects the political, geographic and regional/ local balance of the Member States (Wallace and Wallace, 2004). The European Investment Bank (EIB) is the institution that funds EU funding and has a dual role in this policy, being both an institutional actor of policy and regional funding, as well as an instrument of funding. The Bank grants loans and guarantees, with a low interest, to all states involved in the financing of the project from all sectors of economies, by supporting the policy of regional development at the EU level, the Social Fund objectives and other financial European instruments.

2. Cohesion Policy 2014-2020

The legislative package of the project that will form the framework for the EU's Cohesion Policy for the period 2014-2020 was adopted by the European Commission on 6 October 2011, within which the Commission proposed important changes in the way in which the policy is coordinated and set in application. The main changes are: the realization of the objectives of the 2020 Strategy; the accent put on success; maximizing the impact of UE funding; enhancing efficacy and productivity - this is in line with the outcome (common indicators and programs, reporting, monitoring and evaluation).

This was due to the Commission's adoption in 2011 of the proposed multi-annual financial frameworks for the 2014-2020 financial periods (the Europe 2020 strategy paper).

For 2014-2020, the proposed total budget of € 1.025 billion, out of which € 336 billion is allocated to the Cohesion Policy Instruments 2014-2020, € 40 billion to facilitate the "Europe Connectivity" - these finances the trans-frontier project of energy, transport and technological information, and 649 billion euro for the policy of agriculture, research, other.

The system is equitable for the allocation of European funds, for all EU regions and is the basis for the simulation of GDP rates of the eligibility for all three categories of responses (less development, transition, develop regions). So, the regions from the European Union are ready to receive support from the European Social Fund (ESF) and the European Regional Development Fund (ERDF). However, there will be a distinction between the low developed countries, the transition one and the develop one to ensure the matching of funds according to the level of the Gross Domestic Product (GDP). In the case of less-developed regions, support of those will remain an important priority of the Cohesion Policy. This category is

likely to affect those whose GDP per capita are less than 75% of the medium GDP of the EU-27.

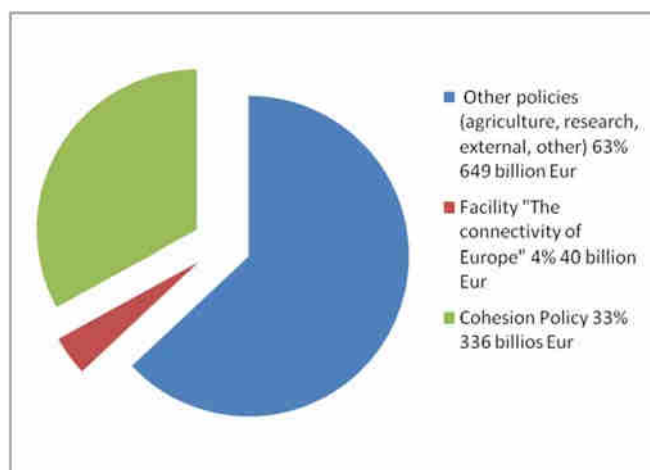


Fig. no. 1 Distribution of Structural Funds 2014-2020

Source: www.fonduri-structurale.ro

The second category, the transitions regions, will be introduced to replace the current system of progressive elimination and to introduce progressive assistance. This is the basis for all regions with a GDP per capita between 75% and 90% of the EU-27 average.

Finally, the third category, the developed countries; to those whose GDP per capita is more than 90% of the GDP of the EU-27 average. Those, less development countries will remain the priority of the cohesion policy, even if there are important challenges that all the state of the member states is facing.

The Cohesion Fund continues to support Member States whose Gross Domestic Product (GDP) is less than 90% of the EU-27 average for the transport sector: Trans-European Transport (TEN-T), transporting system with low carbon dioxide emissions and urban transport, but also in the domain of environment: adapt to climate change and risk mitigation, waste water management, biodiversity, urban improvement, emissions of carbon dioxide. So, part of the Cohesion Fund (€ 10 billion) will be disbursed on the financing of transport from the European Connectivity Facility.

The Partnership Agreement (PA) includes five Structural Funds and the European Investment Fund (EI Funds): European Regional Development Fund (ERDF), Cohesion Fund (CF), European Social Fund (ESF), and European Agricultural Fund for Rural Development (EAFRD), European Fund for Fishing and Maritime Affairs (EFFMA).

In the 2014-2020 period, the funds allocated to Romania amount to approximately € 22.4 billion in Cohesion Policy (ERDF, FSF, Cohesion Fund), to which an additional € 106 million from the Youth Employment Initiative. Funds allocated to the development of agricultural land and rural areas will be supplemented by € 8 billion from the Rural Development Fund for Rural Development (FEADR). Allocation to the European Fund for Fishing and Maritime Affairs (EFFMA) amounts to approximately € 168 million (www.ec.europa.eu). The whole territory of Romania with the exception of the Bucharest -Ilfov area, falls into the category of less development areas.

Considering the importance of the development in Bucharest and more importantly, the importance of this area in terms of the fact that it is pursuing on research activity and development, Romania has decided to increase the allocation of 839 million euro to Bucharest-Ilfov through its transference rate of maximum 3% from less developed counties.

3. Regional Operational Program (ROP) 2014-2020

The 2014-2020 Regional Operational Programs (ROP) is one of the programs by which Romania is accessing the European Structural Funds and the European Regional Development Fund (ERDF) in the 2014-2020 periods. The 2014-2020 Regional Operational Program (ROP), decided by the Minister for Regional Development and Administration, was published by the Commission of the European Communities (CE) on 23 June 2015.

The strategic vision on the need for development to which the ROP 2014-2020 is responding is based on the analysis of the economic and social situation of Romania's regions (in the National Strategy for Regional Development 2014-2020), which led to the identification of the main problems (www.ec.europa.eu):

1. Development of research and innovation: limited transfer of market research results and low levels of business innovation, SMEs: insufficiently developed SME sector, with a negative impact on the competitiveness of the regional economies. The main point is the weakness of the SME sector, in the documentary of national strategic programming, are: the ruthless degree of entrepreneurial culture - reflected by the lowered turnover of businesses in all sectors, the low reluctance of new businesses - 2/3 of the company's disappearance of the market in the first year of life.
2. Energetic efficiency: Energetic consumption is not sustainable and has a high cost in public infrastructure, including public buildings and non-residential buildings.
3. Environment: high pollution in urban areas.
4. Urban development: urban areas are degraded, vacant or unused in the city of Romania.
5. Patrimony resources: valuable resource of cultural poorly capitalized.
6. Tourism: a valuable touristic resource, balanced distributed territorial - alternatively to areas of lesser development/ isolation.
7. Road Infrastructure: the low degree of accountability of certain areas of the country, which may be attributed to a low attractiveness, and extremely low investments.
8. Social and Education Infrastructure: infrastructural, educational, health and social services that undermine the social inclusion and development of human capital.
9. Cadastral: the low level of cadastral endeavours, which affects the implementation of policies on socio-economic development of local communities.
10. Administrative Capacity: the need to strengthen the administrative capacity of the Management Authority, of the Implementing Bodies gives the ROPs and the beneficiaries, for a good implementation of the ROP.

These actions have been corroborated by the strategic action taken by the European Commission as part of the Structural European Funds and the Investments Fund through the European Regional Development Fund for the 2014-2020 periods: innovation and research; digital aging; support for small and medium-sized enterprises (SMEs); economy with low carbon dioxide emission.

ROP 2014-2020 proposes that the general objective is the growth of economic competitiveness and the improvement of the living conditions of local and regional communities, by supporting the development of business, infrastructure and security, the sustainable development of recessions and the fact that it is able to harness itself effectively reevaluate and capitalize its resource innovation and assimilate the technological progression. For the Regional Operational Programs, a total of € 7.9 billion has been allocated for the period 2014-2020, of which € 6.7 billion is the support of the European Union through the European Fund for Regional Development and approximately 1.2 billion Euros is the national contribution, generated by the public funds and the local budget.

The financial resources of the ROP have been partitioned, taking into account the common need for development, which have been identified during the programming process, while at the same time coinciding with the strategies of the researches, as well as with the national

strategy, The Europe 2020 Strategy, the special recommendation of the Regions, the document gives the position of the European Commission, with the answer to the objective themes and the priorities of the budget, which is reflected in the policy of cohesion 2014-2020.

With a view to responding to all the specificities, within the Regional Opportunity Program, 9 of the 11 objectives are addressed, establishing the priority of the institution and the objective of the co responsibility. The priority axes and priority of the invitational programs included in the program is to address all the regions less development (North East, South East, South Muntenia, South West Oltenia, West, North-West and Central), in the process of recovery of gaps, all so the Bucharest-Ilfov region, which is highly develop, to use the competitive potential.

The achievement of the ROPs is based on the integrated use of the allocated budget, which will have an essential role to play in achieving the objectives and assumed objectives by our country within the framework of the 2020 Strategy, along with the decrease of the delays between different regions.

Taking into consideration the certificate concentration between the ERDF, allocating 58% of the financial resources to the ROP will be allocated to the objective 1, 3 and 4 objectives. This emphasizes the importance of the investments to the consolidation of the research, technological development and innovation, as well as to the competitiveness of small and medium enterprises and to the promotion of low carbon dioxide emissions (www.europa.eu).

4. The impact of the ROP on the regions

Bucharest - Ilfov region is the most developed region in the country and is the main beneficiary of the results of the research activities, innovation and development. An important problem with the results of these activities is represented by their insufficient capitalization because of the weakness of the government, which is in the hands of the institute of the enterprise and the middle of the affairs.

In 2012, in all Romania, exist 46 innovation infrastructures and technological transfer, and the biggest one is in Bucharest-Ilfov region (46%), the results of the activities are then utilised in all development region.

ROP is addressed to whole development regions from Romania, including Bucharest – Ilfov region, having the purpose to contribute to the raise of quality and the competitiveness of the products, the services and the processes from companies, in all 8 development regions form Romania, through achievement of technological transfer, by different results of research who can bring added value to the market economy through the intransigence of energies, innovate and technological transfer (business and technological incubators, technological transfer centre, technological information centre, and so on).

For the 2014 -2020 programme will be used, in Regional Operational Program, the instrument on local development placed under the responsibility of the community (CLLD), at urban level, in poor / disadvantaged areas within the cities (www.europa.eu.int).

The needs addressed through CLLD at urban level are, mainly, the lack of access or limited access to nice and decent habitation condition, to infrastructures and educational resources, occupation and employment conditions, to quality medical services, poor capacity for innovation and knowledge at the level of the area the high risk of poverty and social exclusion for disadvantaged groups identified within vulnerable areas of urban areas.

The implementation of CLLD in urban areas has as objective the social integration and the development of marginalized communications in the cities of Romania by stimulating the bottom-up association of actors from a territory that develops and applies integrated and multisectorial strategies of local development.

The types of investments included in the integrated projects funded through the CLLD will focus both on housing infrastructure (social housing), social infrastructure (education, health,

social services) and on measures to encourage employment (through social economy activities), in parallel with the implementation of integrated communication development activities (information / counselling / mediation).

The selection of urban areas that is indicated to apply the CLLD approach will be based on dimensional and coherence criteria. In terms of size, the population targeted by a local partnership will have between 10.000 and 150.000 inhabitants. Thus, 185 cities and all the six sectors of the capital are eligible for funding under Priority Axis 8 of ROP 2014-2020 dedicated to CLLD. Eligible cities (depending on the number of inhabitants) show a distribution covering all regions and country counties (Fonduri UE, 2020).

The local action group will be responsible for developing an integrated local development strategy that will include, among other things, a "project package" that will target infrastructure investments (funded through the ERDF through the 2014-2020 ROP) "soft" investments (ESF funding, through the Human Capital POC). These projects must be a coherent and articulated part of the integrated development strategy developed in accordance with the UAT Local Development Plan of which the area belongs, but also with the needs and expectations of the community and local actors (representatives of local public authorities, civil society, economic environment, etc.) in order to acquire the acceptance and general commitment of the community for further involvement in the implementation of the projects (Uniunea Europeană, 2020).

The role of mobilizing and catalysing all these different categories of stakeholders is held by the "facilitator", whose work depends on the success of developing a viable development strategy

The sustainable urban development approach provided for in Article 7 of the ERDF Regulation will be implemented through Priority Axis 4 combining the investment priorities of the thematic objectives 4 (Low Carbon Economies) and 6 (Environmental Protection and Promoting Effective Use of Resources) (Fonduri UE, 2020). The budget of the priority axis dedicated to urban development will be allocated according to the following categories of cities: growth poles; urban development poles - county residences other than growth poles; zonal development centres - other municipalities and cities.

Each pole of growth will benefit from predetermined indicative allocations, while for other categories of cities (urban development poles, urban development centres), processes for the selection of integrated urban development strategies implemented at regional level will be carried out.

Integrated Territorial Investment (ITI) is an instrument to be used for the Danube Delta Biosphere Reserve. At present, with the support of Mondial Bank, the development strategy of this territory for the period 2014-2020 is being developed.

The achievement of these objectives will be achieved through integrated projects included in local development strategies, which will include both investments in infrastructure and investments in the provision of different types of services.

The "hard" investments, respectively the infrastructure one, will be funded through the ROP (ERDF) and will cover: social housing, social economy and community-based health and social intervention centres. These interventions will help to ensure decent housing, improve health and increase the employment of the underprivileged population (by creating the premises of specific infrastructure).

"Soft" investments on the different types of services will be funded from the ESF and will cover: parental education, population literacy, family planning courses, professional training courses, reconversion courses professional development, life skills development, anti-discrimination, community empowerment, cultural activities of social integration. These interventions, which are complementary to those of the "hard" type, will contribute to improving the health of the population, community development, socio-professional and cultural integration of marginalized communities.

The overall outcome of the development and implementation of ERDF-funded and ESF-funded projects will be to reduce the number of marginalized areas and communities, thus contributing, to a certain extent, to the fulfilment of Romania's commitment to one of the objectives of the Europe 2020 Strategy, the social inclusion of disadvantaged presidents and their removal from poverty.

Conclusions

Attracting European money in the country is a real way to fight the crisis. That is why all efforts must be directed to the absence of a larger volume of funds. It is well known that Romania pays more to the European Union than European absorbed funds.

Solving problems and facilitating the use of new solutions allows the promotion of inventions and innovations, respectively the modification in the sense of improving the conditions within the scope of the project. All this leads to the economic and social development of the ensemble targeted by the results of the project.

Cohesion policy has a broad vision. This vision includes not only the economic development of delayed regions and the support of vulnerable social groups but also the social and ecological sustainability of development and respect for the territorial and cultural characteristics of different parts of the EU.

A recurring evaluation result in all areas of investment has highlighted the "absorption" concern, namely spending funds rather than concentrating on the objectives for which the programs were created. While the first obviously a prerequisite of success, the real importance holds the second. By way of example, typically a monitoring system prioritizes spending and responding (such as the number of trainees' permits or kilometers of newly built roads) to the outcome (such as the number of people who get jobs in training or travel time economically), not to mention the impact (the effect is the fact that the more efficient the work or the more efficient the transport is more effective on the regional development).

Cohesion policy must promote a focus on performance. It has to draw from programs that identify only a limited number of Cohesion Policy priorities with a clear vision of how they will be achieved and how their realization will contribute to the economic, social and territorial development of the regions. of the Member States involved.

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INVESTIGATING THE IMPACT OF ORGANIZATIONAL CULTURE ON INFORMATION TECHNOLOGY GOVERNANCE

Ion Smeureanu¹ and Bassel Diab²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: ion.smeureanu@csie.ase.ro; E-mail: basseljdiab@gmail.com

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Abstract

This article seeks to explore the perceptions of companies' top managements regarding the role of corporate culture and ethics in attaining highly mature IT governance. It mainly focuses on testing the correlation between five IT governance mechanisms or factors and the effectiveness level of governance in big companies in Lebanon. A sample of 76 executives has been empirically tested through a survey. Findings showed that the main enabling mechanisms of governance in IT are "Communication Approaches" and "Top Management inclusion in IT" with an average influence for corporate culture and ethics.

Keywords

IT governance, organizational culture, ethical compliance, ITG framework.

JEL Classification

C12, M14, M15

Introduction

The bankruptcy of Enron in 2001, Lehman Brothers in 2008, Thomas Cook in 2019 and a long list of big companies worldwide has placed corporate governance again, embracing IT governance, as one of the top critical concerns encountered by top managements. Even governments have been stimulated to make legislations and laws in response to collapses and scandals such as the Sarbanes-Oxley (SOX) Act of 2002 in the US in order to ensure investors a high level of protection against fraudulent financial reporting by corporations (Kenton, 2020). Picou and Rubach define corporate governance as "... the construction of rules, practices and incentives to effectively align the interests of agents with those of principals"(2006). This alignment has to be achieved and sustained through honest and transparent adherence to ethics or ethical standards far beyond regulations and rules.

Business-IT interdependency

In the contemporary business world, companies spend a significant percentage of their annual budgets on information technology infrastructures. Trueman (2019) believes that "...Chief

Information Officers are now routinely being challenged to use IT strategies and solutions not only to advance digitalization but to simultaneously drive business innovation and transformation". This reality attracts executives (e.g. BOD, CEO) to actively collaborate with CIOs and to focus on a reasonable governance of all information technology facets in businesses. The Information System Audit and Control Association (ISACA) (2009) defines IT governance as "IT governance is basically concerned with the way IT delivers value and it's the management of the risks associated with it which can be brought about through the strategic alignment of business and IT, resource management and performance management" Khther and Othman (2013) assert.

Motivation of Study

Maverick (2019) defines moral hazard as risk-taking; moral hazard exists when one party of an agreement or contract (formal or not) takes uncommon risk while being fully conscious that any possible negative outcomes would be a burden at the second party's shoulders. CEOs and CIOs could witness moral hazard throughout their collaboration; it is originally traced back to "asymmetric information" where CIOs enjoy greater knowledge about IT issues than do CEOs, who would incur any adverse consequences in front of the board. Thus, CEOs are substantially invited to proceed with business governance of IT strategies and projects so as to prevent immoral attitude from the side of CIOs or other IT executives, and to push them to converge on the company's overall common interest.

Besides, some scholars argue for the strong relationship between organizational culture, as an independent variable, and corporate governance as the dependent one. Accordingly, we believe that organizational culture contributes deeply to building and applying IT governance (ITG) in a very effective way. Organizational culture is briefly defined to be the collection of common values and beliefs shared among employees in an organization (Tsai, 2011). Therefore, the main research question is: How powerful is the role of corporate culture in enhancing the mechanisms of IT governance of companies operating in Lebanon? Two sub-questions emerge: What are the factors which could support the evolution of culture's role? Which factors have the most prominent impact on culture's role?

After reviewing the available literature on IT governance in Lebanon, we found a few articles tackling this topic (e.g. Hejase et al., 2016). However, we can argue to a certain extent that our paper is the first empirical study, through a survey, aiming to investigate the association between a sound culture and effective IT governance in Lebanon. Furthermore, this paper targets to advancing the knowledge of top managements about the strong positive influence of ITG mechanisms on the success and effectiveness of IT governance.

Literature Review

It is necessary to explain the theoretical foundations upon which our investigation is based. Hence, this section is divided into two sub-sections. First one discusses the origin of the governance terminology as well as its significance, while the second one forms a review of the past studies which explored the relationship between culture and IT governance.

Origin of IT Governance

It has been presumed that owners of companies invest their wealth and expect it in return to be maximized despite the risk they incur; however they are often not involved in the daily business operations. On the other side, managers are the decision makers who hold zero risk while concentrating essentially on protecting their positions and financial income. This conflict of interest is called "*the principal-agent problem... differences of opinion and even differences in priorities and interests can arise*" (Kopp, 2019). Principals strive to constrict this problem depending on specific measures and procedures such as forming a Board of Directors with corporate governance as one of its core duties so that stakeholders are assured that deceptive activities would never be permitted. Simultaneously, the agents are required to secure high levels of scrutiny in front of the owners through employing external parties within

the audit committees for example. Subsequently, top managements must effectively engage in the information systems.

Many researchers have studied the components or mechanisms of robust IT governance. For instance, Levstek et al. (2018) adopt the most influential ITG mechanisms of De Haes et al. (2005) which are a mixture of structures, processes and relational mechanisms e.g. IT steering committee, IT performance management and job rotation. Belhaj and Zahi (2019) empirically verify the leading mechanisms of ITG; they find a positive interrelation mainly between IT strategy committee, IT steering committee, and active participation by principal stakeholders and the level of ITG effectiveness.

As for the ITG frameworks, there are various ones with different approaches. The Control Objectives for Information and Related Technology (COBIT) serves as a guide for companies throughout its own ITG, starting from the micro level till reaching the highest level, but being repressive. COBIT is beneficial for connecting the technical issues, business risks and the need for control. On the other side, the Australian Standard focuses on the strategic level.

To summarize, Filatotchev (2007) categorizes the ITG approaches into defensive and strategic. The defensive ITG acts a firewall which bans or at least alleviates any possible harmful output. Whereas the strategic ITG aims to provide companies' owners with a long lasting business value like a robust competitive advantage for IT related projects.

IT Governance and Organizational Culture

Since many years ago, researchers have been exploring the impact of organizational culture, specifically its ethics, on the ability of companies to conduct effective corporate governance. Carlos Ghosn, the ex-Nissan's board chairman, was arrested for financial misconduct in 2018; this case highlighted the poor governance procedures at Nissan. Senior management has to increase the knowledge of its employees on ethical and legal aspects to behave responsibly and ethically whenever confronting a suspicious situation. Also, this should motivate employees to disclose any wrong behavior to their management. In brief, the existence of a culture where ethical compliance is a shared organizational value among all employees is expected to boost what Trevino et al. (1999) call "sense of community".

Nonetheless, a small number of studies have researched the cause-effect relationship between culture & its ethics and ITG. In 2011, the IT Governance Institute completes a survey in which organizational culture was voted by 50% of respondents as a very significant factor or mechanism supporting effective ITG, while 57% say that the strategy and objectives of business is the top powerful factor (ITGI, 2011). Moreover, COBIT 2019 emphasizes a soft side of ITG where it encompasses a primary component, the "Culture, Ethics and Behavior", to be a core objective of top management (ISACA, 2018). This development is considered an extension of the original COBIT framework (1996), which is found on the hard side of ITG i.e. processes and structure.

Research Model

This paper tries to discover the perceptions of companies' top management regarding the role of corporate culture and ethics in attaining highly mature IT governance. This is stimulated by the fact that ethical environment is anticipated to support companies in accomplishing its needs of ITG and thereafter aligning its business strategies & objectives with those of IT. Finally, the research model of our study (Figure no. 1) is structured based on the available literature and addressed using questionnaire technique.



Fig. no. 1 The Research Model of ITG Effectiveness

First, we think it is beneficial for readers to explain each factor or mechanism of ITG, as included in the research model, and then to provide a relevant hypothesis for empirical test.

Communication Approaches

Organizational communication is a leading enabler of a healthy environment of internal control (COSO, 1992). Communication is supposed to support the satisfaction of the wealth/value maximization goal of owners, controlled by ITG. A crystal clear whistle blowing policy is a perfect example of communication systems which promotes the potency and efficiency of a culture of ethical compliance.

Thus, H1 is: Effective communication approaches positively affects a culture of ethical compliance.

Top Management Inclusion in IT

Top management refers to executives like CEO or others reporting directly to the CEO. Schwartz argues that “*management support and setting the example*” are the most influential mechanisms that leaders should adapt in order to push employees to behave ethically and to align their conduct with organizational objectives (2004). Similar to communication systems, management inclusion in IT boosts facilitates the wealth/value maximization goal pursued by owners.

So, H2 is: Top management inclusion in IT positively impacts a culture of ethical compliance.

Organizational Culture and Ethics

As previously discussed, a healthy ethical environment is vital for fulfilling the desired ITG goals of companies as well as business-IT strategic alignment (BITA). This kind of environment is expected to satisfy owners concerning their wealth maximizing objective. Then companies must take some brave steps such as following an ITG framework (e.g. COBIT), practicing a transparent whistle blowing policy, and doing whatever is necessary for increasing employees’ ethical knowledge.

Hence, H3 is: A culture of ethical compliance positively affects ITG effectiveness.

IT Steering Committee

IT steering committee is a team composed of executives at the top managerial level and belongs to various departments. The IT Governance Institute specifies the major tasks of this committee to be the realization of BITA, “*tracking IT investments, setting priorities and allocating scarce resources*”(ITGI, 2003). This committee is a significant mechanism for wealth or value maximization too.

Therefore, H4 is: IT steering committee positively affects ITG effectiveness.

IT-Business Executive Committee

IT-Business executive committee, equivalent to “IT Strategy Committee” as per the IT Governance Institute, is “*one of the most effective mechanisms for establishing governance over IT*”[16]. Boards rely on particular committees like the audit committee in order to perform their governance over the most critical departments. In the same way, boards have to engage in IT governance through an IT-business executive committee; the ITG Institute

defines the duties of executive committee as “*considering how the board should become involved in IT governance, how to integrate the board’s role in IT and business strategy, and the extent to which the committee has an ongoing role in IT governance*”.

So, H5 is: IT-business executive committee positively affects ITG effectiveness.

Research methodology

The above explained five hypotheses are subject to empirical test through a questionnaire targeting nominated categories of executives or managers i.e. Chief Information Officer (CIO), Chief Executive Officer (CEO), General Managers (GM) and internal audit managers. Respondents belong to different industries but working exclusively in large companies within Lebanon, as we believe corporate governance, mainly IT governance, is a privilege for this size of organizations. The dependent variable is the ITG effectiveness level and the independent variables are: communication approaches, top management inclusion in IT, organizational culture/ethics, IT steering committee and IT-business executive committee. The questionnaire includes a combination of self-developed questions and other already tested or validated mechanisms of IT governance. Regarding the scale, the authors follow a 6-point Likert scale.

The questions included in the adopted questionnaire are as follow:

ITG effectiveness level:

1. Could the maturity level of strategic alignment be ranked as high enough to contribute to achieving common business and IT goals? (Smeureanu and Diab, 2019)
2. Do the individual ITG mechanisms strongly contribute to achieving highly effective organizational ITG? (Ali and Green, 2007)

Communication approaches:

1. Could top management rely on the organizational communication mechanisms or systems to make employees completely aware of the existence of ITG mechanisms? (Weill and Ross, 2004)
2. Could top management rely on the organizational communication mechanisms or systems to make employees completely aware of the ITG decisions and processes? (Weill and Ross, 2004)

Top management inclusion in IT:

1. What is the extent to which top management is engaged in strategic discussions and decisions related to IT, other than the IT steering committee? (Vaswani, 2003)
2. What is the extent to which top management recognizes the IT inventions created by competitors? (Vaswani, 2003)

Organizational culture and ethics:

1. What is the extent to which corporate culture and its ethics support management in voiding any transgression preventing the accomplishment of organizational IT objectives? (Trevino et al., 1999)
2. What is the extent to which top management is leading a culture of ethics helpful to IT goals? (Trevino et al., 1999)

IT steering committee:

1. What is the extent to which IT steering committee directs strategic IT projects while aligned with the overall strategic business directions? (Ali and Green, 2007)
2. What is the extent to which IT steering committee is leading the acquisition of business value out of strategic IT projects? (Ali and Green, 2007)

IT-Business executive committee:

1. What is the extent to which IT-business executive committee contributes to attaining business-IT strategic alignment? (IT Governance Institute, 2003)
2. What is the extent to which IT-business executive committee guides top management in IT strategy issue? (Hardy, 2003)

General Managers, CEOs, CIOs and internal audit managers represent 46%, 24%, 18% and 12% of respondents respectively. The mean managerial experience is 8.9 years where respondents are familiar with IT governance scoring 5 on a 6-point scale as an average. To test the goodness-of-fit of the model, we did a Chi-square (χ^2) test and concluded that $113.04 >> 30.6$ with 15 degree of freedom at a critical value of 0.01. This means that the model greatly fits our data.

Findings and interpretations

An online questionnaire has been sent to 367 executives of large enterprises; we received back 76 complete responses. We calculated the Cronbach's Alpha to test the reliability of our model as well as its constructs. Cronbach's Alpha of the model is $0.843 > 0.70$ which implies that it is reliable and valid. Also, the Cronbach's Alpha scores of the model's constructs are all reliable and valid too (Table no. 1).

In order to test the hypotheses among the constructs or variables of our model, we decided to use the SPSS software for statistical analysis and outputs are presented in Table no. 2.

Communication approaches has a strong positive influence on the organizational culture and mainly its ethics (H1). This factor or mechanism has the highest Pearson coefficient; approaches such as anonymous hotlines and clear whistle blowing procedures are significant enablers of a supportive corporate culture of ethical compliance. This would make IT governance mechanisms, decisions and processes well known for employees.

Table no. 1 Reliability Test of the Model's Constructs

Construct	Cronbach's Alpha
Communication Approaches	0.83
Top management inclusion in IT	0.84
Organizational Culture & Ethics	0.84
IT Steering Committee	0.83
IT-Business Executive Committee	0.82

Likewise, top management inclusion in IT has also a strong positive impact on the organizational culture and mainly its ethics (H2). The involvement of senior managers in discussing and making strategic IT decisions and their awareness of the major IT steps of competitors has been shown to be very effective in developing a culture where ethical compliance is prioritized.

Organizational culture and its ethical component have a positive effect on the level of IT governance effectiveness (H3); however this effect was found to be moderate. A culture where top management leads actively and by example the ethical compliance and conduct is likely to motivate employees to disclose any potential misconduct, therefore contributing to better quality of managerial decisions. This would assist in protecting the core goals of IT governance from any threat.

Table no. 2 Pearson Correlation Coefficients of the Variables

Dependent Variable	Indep. Variable	Sign of Hypot hesis	Pearson Coef.	Signifi- cance
Culture/Ethics	H1 Communication Approaches	+		0.000
	Comm. ITG mechanisms		0.824**	
	Comm. ITG decisions	+	0.981**	0.000
	H2 Top mgt inclusion in IT			
ITG Effectiveness Level	Mgt engaged in decisions	+	0.879**	0.000
	Mgt aware of competitors' IT		0.712**	
	H3 Culture and Ethics	+		0.000
	Culture/Ethics vs. violation		0.766**	
	Mgt leading an ethical culture	+	0.751**	0.393
	H4 IT steering committee			
	Committee and BITA	+	0.133	0.101
	Committee and Business value		0.077	
	H5 IT-Business executive committee			
	Committee and BITA		0.170	
	Committee guides top mgt		0.018	

On the contrary, findings could not support hypotheses H4 and H5 proposing positive influence of IT steering committee and IT-business executive committee on the organizational effectiveness level of IT governance. The direct explanation of this rejection probably means that respondents have not perceived an important role of IT steering committee to direct the strategic IT projects and derive business values from within. Moreover, this could signify that respondents have seen a low expected participation of a committee formed by business and IT executives in reaching and preserving IT-business strategic alignment, and in guiding or advising top management concerning the prime IT strategic issues. This conclusion surprisingly contradicts the findings of Smeureanu and Diab (2019), where a joint committee of IT and business executives was found to be the second most influencing enabler of the maturity level of strategic alignment in big organizations in Lebanon.

Conclusions

This study aims to investigate the impact of organizational culture, with essential focus on its Ethics element, on the maturity of IT governance in big companies running business in Lebanon. Respondents occupy senior managerial positions since they are CEOs, CIOs, GMs and internal audit managers. The findings clearly manifested the big contribution of a sound corporate culture, with high degree of ethical compliance regarding IT, to the effectiveness level of IT governance. The main enabling mechanisms are found to be “*Communication Approaches and Top Management inclusion in IT*”. The “*Organizational culture & Ethics*” mechanism by itself could not be supported empirically, which might be caused by the perception that the involvement of top management is the fundamental driver of ethical compliance in companies. Furthermore, we can conclude that an effective managerial intervention, boosted through clear communication systems, is capable of cancelling the need to establish both of IT steering committee and IT-business executive committee as per the judgment of our study’s respondents.

This paper could serve, to the best of our knowledge, as the first attempt to empirically test the correlation between organizational culture & ethics and the maturity & efficacy of IT governance adopted by companies of big size in Lebanon. It should alert senior managers or executives to take serious initiatives, such as those tested in this study, and to sponsor the creation and/or evolution of healthy ethical culture of compliance. Over and above, our work should stimulate other scholars to conduct further studies whether to test the same ITG mechanisms in different context (e.g. emphasizing on a specific industry or SMEs) or to find out positive impact of other cultural or ethical factors on ITG.

On the other hand, our ITG model has been tested subjectively based on the perceptions of respondents. Although respondents are seniors or executives, this should not deny the necessity of discovering more objective measures so as to increase the reliability of findings.

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ORGANIZATIONAL CHANGE STRATEGIES FOR DEVELOPING SUSTAINABLE BUSINESS

Ildikó-Csilla Takács¹

¹⁾ The Bucharest University of Economic Studies, Romania

E-mail: csillatakacs12@gmail.com

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Abstract

Organizational change along the sustainability agenda outlines a managerial and policy dilemma that needs strategic goals with advanced implementation and international responsibilities. The present study investigates the integration of organizational change strategies in the economic cycle of an organization so as to develop sustainability in the long run that is a ground-breaking strategic factor, since the challenge of sustainability will restructure the corporations' competitiveness. This paper is aimed at outlining and refining the importance of integrated business models including organizational-health assessments, benchmarks and value-captured models that can help analysing and applying the best optimization of the required businesses. The objective of the study is to examine the importance of sustainability of innovative strategies in order to support the hypothesis that organizational change has a major role on their long term competitive advantage. The methodology is following an empirical research outsourcing qualitative and quantitative methods that are foremost realization for distinctive sustainability. The case study shows that all gathered data imply integrated business models and determine the demand for organizational change strategies. The results demonstrate that the top competing factors ensure successful organizational change, since transformational strategies are interrelated with the organizations' objectives.

Keywords

organizational change, transformational strategy, sustainable business, competitive advantage, business models

JEL Classification

M16

Introduction

Managing organizational change has a gap between innovation management and sustainable business progress, thus innovation strategy has become the vital opportunity of the world

largest economies to transform and re-shape their business models, since information flow, financial policies, social norms, new targets and Information Technology (IT) challenges are constantly changing and developing.

There is a great deal of literature regarding large-scale organizational change, as Kiesner & Baumgartner (2019) present, the majority of changes continue to fail (around 70%), simply because they do not maintain a forceful organizational strategy system to be sustainable on the market. On the other hand, Bucy et al. (2016) state that in successful organizational change not only senior leaders but also frontline employees are engaged intensively. Corporations need to build commitments to a set of aspirations, as organizational change is a holistic, top-priority undertaking that requires agility from each member of the executive team to complete the full prospective of a business (Lindsay et al., 2018). While every innovation strategy requires change, not every organizational change strategy follows innovation. Accordingly, not every time the implementation of organizational changes is seen as opportunities, hence top-management teams handle them frequently under the topic of risk management.

Therefore, as Borden et al. (2018) present, the role of the Chief Transformation Officer (CTO) along with the Chief Strategy Officer (CSO) within the Program Management Office (PMO) is to develop business models, to build new assessments that are essential for the initiative to be sustained, to create full potential and drive the change across the business in order to grow the organization sustainable and the transformation to become booming. According to Takacs (2018), the CTO and CSO should report the executive team's progress to the Chief Executive Officer (CEO) and together they have to form the transformational mind-set, the convention of realizing value, place that value to the bottom line and apply the strategic decisions.

Consequently, the study of McKinsey & Company (2017) is extended by the author, which claim that provided organizations can build a bridge out of expertise towards new perspectives, they will always be sustainable in the long run, because change management offers the corporation a motivating element. In order to revenue sustainable progression, the CEOs together with the CTOs must track the bottom-line impact of advantages to establish a performance infrastructure business model to steer the company and to employ the right decision for successful growth. The theoretical framework is based on the previous studies with the aim of revealing the underlying strategies applied in authentic business models, providing answer to the theoretical hypothesis, and presenting existing findings with data analysis. The purpose of this research is to determine the procedure of strategic management by creating adaptable organizations, as well as ascertain the focus of the innovation management and its objectives to the right market. In order to prefigure the best organizational change strategies, the empirical research has been focusing mainly on the recent time-frame 2015 – 2020. The conclusion section summarizes practical applications of the research results and tangles possible future research questions.

Theoretical framework

Change strategies within an organization are complex, thus several interpretations can be found in the literature. According to McKinsey & Company (2017), the hallmarks of a true transformation strategy are disruption, friction, and change that are undergoing an essential improvement of the corporation's business model. A well-defined organizational change strategy empowers the company to plan a successful business with an emphasis on the roles and responsibilities of the front line, as well as a strategic method to talent management in order to match its competitive factors. Corporations must focus on continuous improvement, create clear accountability based on Key Performance Indicators (KPIs), attain strong leadership, and sustain an effective program-management structure by thinking about sustainability from the very beginning of the whole process.

Furthermore, sustainability of a corporation derives from the holistic change of organizational health, namely the mind-set of the employees and the organizational culture or behavioural

change. Change management can be used effectively to deal with organizational change strategies and radically improve business models after having analysed capital productivity, cost efficiency, operational effectiveness, customers satisfaction, sales excellence and top-line growth.

As Takacs (2018) states, the vitality of innovation management creates change management, therefore leaders of a company should focus on a user-centred strategy business model to outperform their competitors in a systematic way to achieve demonstrative commitment, determination, cultural shifts, research, partnership, inventiveness and enhancement, as can be seen in Figure no. 1:

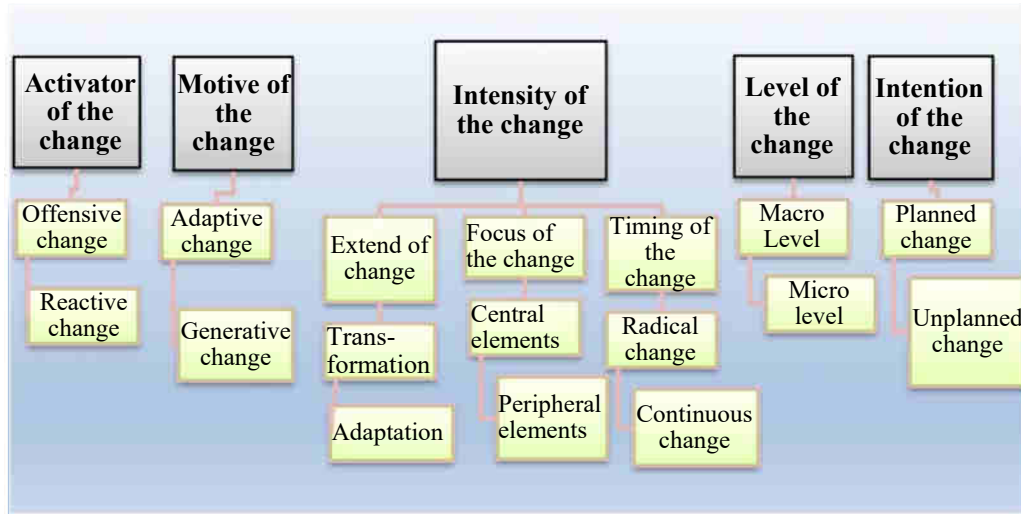


Fig. no. 1 Classification of Change Management

Source: author based on Weber, G., 2017. *Sustainability and Energy Management: Innovative and Responsible Business Practices for Sustainable Energy Strategies of Enterprises in Relation with CSR*, Springer Gabler, Wiesbaden

Change management also ensures organizations innovative and agile thinking, applies effective procedures and offers the best optimal results of the organizational change process. Identifying the strength and weaknesses of the organization, CTOs must recognize their potentials, so as to be evaluated in the production, research & development, finance and Human Resources (HR) departments and to analyse the strategic and operational targets in line with the objectives of the corporation. Conclusively, the proper implementations need to be applied by the top-down management, nevertheless their performance improvements can be practiced by the executive team that must meet the standards of social and methodological competencies.

Empirical Considerations on Incorporated Business Models

Organizational change based on Business Models (BM) is the most powerful driver with the function of bridging the gap between strategy and sustainability. According to Doll and Eisert (2015), BMs maintain market leadership and assure corporations' competitive advantage in case organizations continuously and systematically improve their BMs.

The five principles of BMs:

- 1) *Business Models as an Instantiation of Strategy* – represent the strategy, forming it illustrative, substantial, understandable, and eventually implementable after the conventions having been verified;

- 2) *Business Models as a Management Framework or Decision Models* – the traditional elements of analysis can be replaced, offering a management framework to share the business logic and collaboration in order to develop the best optimization;
- 3) *Business Models as a Structural Approach* – the segmentation of BMs stipulates a complete view joining external and internal aspects;
- 4) *Business Models as a Common Ground* – the transformation of simplicity, tangibility and proximity make BMs extremely powerful that also improves collaboration;
- 5) *Business Models as an Organizational Link* – connect different organizational levels, i.e. the higher-level business model will be decomposed into the lower-level models or the lower-level model can be improved into the higher-level model.

The five principles of BMs can be implemented in different case studies from the development of business ideas to the examination of unsuccessful businesses or simply optimizing the successful BMs. In addition, they can be used as a toolset of methods and can be combined in multiple ways in order to satisfy the requirements of each business context. Consequently, BMs are always transformational and not static in nature, they can be developed and implemented according to four phases with the aim of an ongoing optimization:

- [1] *Analyse & Improve* – analyse customer needs, competitors, key activities, partnering options and improve value proposition to increase unique aspects
- [2] *Challenge & Change* – different BM options can be combined and/or multiple, potential BMs could be developed, i.e. interaction between suppliers and customers should be also taken into consideration at this phase
- [3] *Test and verify* – assumptions derived out of the BMs regarding customers' needs should be tested and validated at the very beginning with the help of Minimal Viable Product (MVP) concept through the Build-Measure-Learn cycle
- [4] *Evaluate & Decide* – BMs must be evaluated qualitatively and quantitatively through a double prism: impact vs. ease of implementation, and revenue potential vs. costs and risks (e.g. a BM roadmap by creating value)

Overall, business models can be systematically developed, optimized and validated in order to establish a powerful driver of competitive advantage that assures economic viability. Accordingly, the empirical research was analysed by the author to disclose the innovative factors lying behind the organizational change strategies and their influence on business practices towards developing sustainable business policy.

Research objectives and Methodology

This study offers valuable insights on how threats and opportunities consolidate senior leaders' decisions, following an empirical research outsourcing quantitative methods based on 60,000 survey responses that are foremost realization for distinctive sustainability when they are complying the demands of internal and external market conditions, i.e. *How could organizations adapt to change to remain in the competition and outperform their competitors?* Successful companies after revising their present standpoint, do incremental upgrading yearly in order to stay ahead of the competition, by continually responding to change and taking practical risks to support the analysis of innovative factors. The job of the CTOs is absolutely essential in the whole process of organizational change by creating value for the organization, including top and bottom line, capital expenditures and working capital. Accordingly, rapid execution of immediate opportunities can be accomplished by cross-functional decisions in the following stages answering to the following questions: *What to change in order to solve the challenge of sustainability?* and *How and why to change existing mind-sets?*

Table no. 1 Organizational Change

What to change?	1. Independent diligence – establish the trajectory and full potential of the business using an investor style 2. Bottom-up planning – develop transformation plan – initiatives and financial projections 3. Implementation – launch a full-scale effort to drive value to the bottom line
How to change?	RAPID EXECUTION 4. Change management – take tactical action to change the mind-sets and behaviours necessary to sustain the transformation 5. Performance infrastructure – put in place the people, process, and tools to ensure superior execution and value delivery to the bottom line
Why to change?	6. Performance-management process – change and create strong incentives for all the team regardless of their position 7. Holistic change – organizational health and culture

Source: author based on Bucy, M. et al., 2016. The 'how' of transformation. McKinsey & Company, pp.1-7

One of the most important phase within the organizational change is performance infrastructure, which supports communication and coordination on the executive-level alignment warranting superior execution and value delivery. It is very important to observe that a slow organizational change is an ineffective transformational process. In addition, following a 'personalised' business model is central for a corporation, as a focal strategic priority ensures companies transforming theoretical strategy into practical accomplishment. Another important fact is that besides the *what* and *how* questions the *why* was also investigated in the process of performance management, since not only the organizations must be redesigned but also the employees. The first step is to create a positive vision of the future; the second step is a reinforcing mechanism, i.e. set and monitor targets; the third step is to teach and learn skills and the fourth step is role modelling.

Therefore, an example business model would be the Management Entwicklung and Research (MER) model, which is one of the most well-known models recognized among the academic and professionals relying on integral management, i.e. a multidimensional consolidation of organizational governance. Business policy revises the strategic goals of an organization including its vision, mission and purposes that can be incorporated directly in the management processes with the decisions of CEOs and CTOs.

The research methodology also follows qualitative methods, which involves interviews based on the Corporate Sustainability Barometer from Leuphana University Lüneburg on the largest German companies focusing on the top management and roles of organizational change, motivation and drivers behind BMs implementation and sustainability approaches.

The research shows that seven successful key factors were followed to implement and sustain organizational change, nevertheless the top implementers are more than three times likelier to implement and sustain change in their organizations provided they plan for long-term sustainability from day one. Additionally, they can stay further ahead their competitors in

effective program management with their core capabilities, since skills management has a vital impact on the organizational change, as can be seen in Figure no. 2 below:

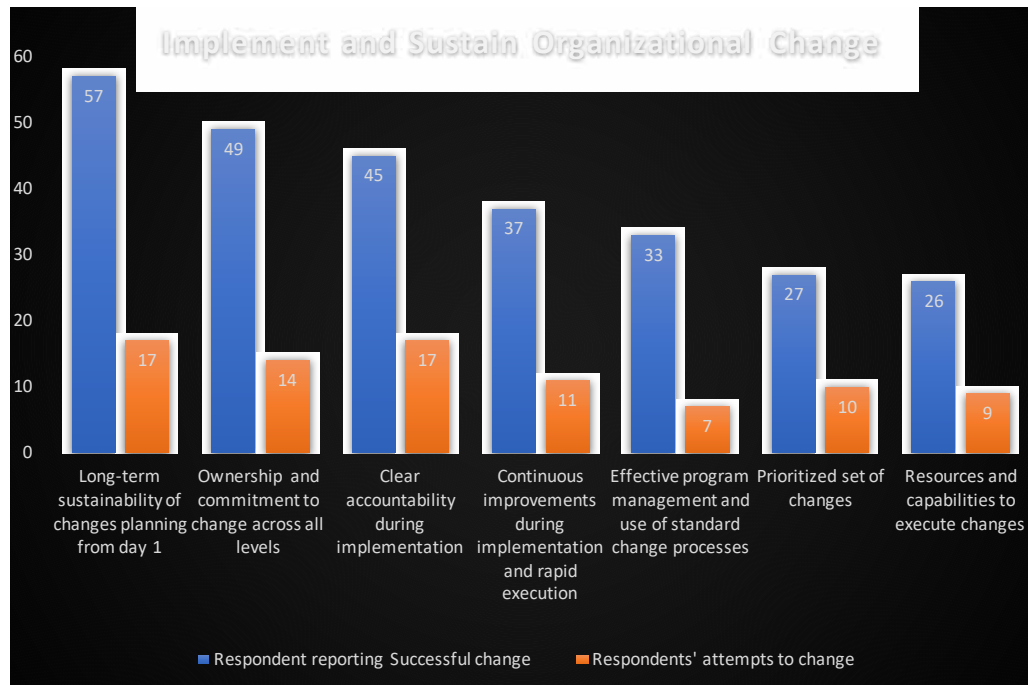


Fig. no. 2 Implement and Sustain Organizational Change

Source: author based on McKinsey & Company 2018. *How the Implementation of organizational change is evolving*, pp.1-8

Overall, confirming consequential change and consenting employees to improve and refine new solutions continually, the success is more than four times likelier of the corporations.

Research Results

Kiron et al. (2017) conducted an eight-year study, based on 60,000 survey responses and 150 interviews with executives and senior leaders on the integration of corporation sustainability into business strategy. Some of the negative impacts of sustainable business strategies were because of lack of expertise and short-term perspectives, since only 48% of the CEOs engaged with sustainability and around 30% of the boards had supervising roles in sustainability, though 86% of the respondents admitted that the board should have a strong role in integrating sustainability into the corporation.

According to the respondents, three important practices are also contributing to the successful management of the organizational change:

1. Communication – the desired outcome should be communicated prior to its inauguration
2. Prioritization – prospective ideas have to be clearly prioritized before its implementation
3. Expertise – employees with most relevant expertise should develop the business case and not necessarily the PMO

The McKinsey Global survey (2017) presented that 84% of the respondents admitted that their CEOs and senior leaders are deeply engaged, about 94% in the process of change management. The involvement of the frontline employees was 73% and their line managers

82% that could lead to a successful transformation. According to the survey, the corporations' success also relies on improving organizations' performance and bestowing corporations with sustained, long-term implementation. Thus, the role of PMO was involved in 76%, while the contribution of the leaders of the transformation initiatives were 89%.

The organizational change based on the performance management process showed that the change is 5.8 times more likely to be successful if the CEOs communicate a high-level change story, as well as 6.3 times more probable when senior leaders share associated messages about the change effort with their colleagues. In addition, the PMO has the utmost impact on successful organizational change when they identify possible blocks to change and share knowledge, on the other hand the senior leaders take full ownership of their individual initiatives that are delivered into the forecast, putting value to the bottom line.

29% of organizational change is successful when senior leaders replace uncommitted employees, compared with 6% when leaders keep employees in their last position. In the previous case, an important factor that leads to success is to improve cultural shifts within the organization, by bringing in new talents or reposition staffs internally.

The survey results also revealed that respondents have on average rated organizational units as promoting for sustainability implementation, or at least as being neutral to it, thus the following steps were followed to support successful organizational change:

1. Show progress to the front line – communicate creatively to stimulate progress with regular surveys, measure cultural pulse, determine milestones and potential changes to be made
2. Involve HR as a strategic partner – HR leaders are less critical to the outcome of organizational change, thus their function should be strategically positioned at the centre of change and not just having a role in change. This way the HR can put into practice its expertise to recruitment and talent development by adding value to the new strategic workforce-planning tactics
3. Involve employees through new channels – the use of social media and live-feedback complements the information flow from top to bottom lines providing regular updates on the process of change management
4. Performance management – monitoring KPIs during organizational change the success is four times likelier
5. Training employees to use digital solutions – having determined clear processes to business units and mastering the implemented solutions, the success is more than three times more probable

To sum up, successful organizational change strategies also involve better frontline strategies in the change management outfitted for sustained performance. To advance productivity CEOs have to inspect new ways of working, according to state-of-the-art technology, that need new skills alongside the middle and top leaders of the corporation to face the science of change and implementation.

Conclusions

The focus of this study was to highlight the influence of organizational change strategies on sustainability along with business models. There is no general applicable formula that each corporation can use alike, however there are useful optimized business models that can be taken into consideration from successful companies when devising personalized business models and implementing as well as sustaining organizational change.

The recent emphasis on sustainable business models needed to be complemented by in-depth analyses of organizational change strategies that provided insights to the theoretical domains through the academic model, thus the case study meant to be a contrastive analysis connected to the methodology of research. The theoretical framework was based on recent studies

comprising the last four years with the purpose of revealing the role of the executive teams in creating the most boosted business models. The mind-set of the CEO and of the whole corporation is ultimately what distinguishes organizations in a high-change market leadership versus those competitors who fail at the end of the performance management process. In conclusion, organizational change strategies are invaluable skills that can be developed within the corporations. The present research shows new approaches, deep scientific expertise and particular aspects of business models when planning innovative strategies highlighting the importance of change management that leads to the growth of competitive and sustainable strategic management, leaving room for future academic and practical expansion.

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REVENUE AND EXPENDITURE BUDGET, INSTRUMENT OF FINANCIAL MANAGEMENT

Carmen Țurlea¹, Maria Rafaela Cazazian² and Marian Valentin Moldoveanu³

^{1), 2), 3)} *The Bucharest University of Economic Studies*

E-mail: turleacarmen@yahoo.com; E-mail: rafaela_cazazian@yahoo.com;

E-mail: moldoveanu.valentin3@gmail.com

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Abstract

In the current economic context, companies are starting to pay more attention to the efficient management of resources and they use for this purpose, the revenue and expenditure budgets as a financial management instrument, at company level and at the level of the main types of company activities.

In close correlation with the financial balance, through the budget, the cash balance is managed and ensured as part of the budget. Moreover, the financial balance must be controlled through the budget therefore there is a certain timing between the pace of insuring companies with money funds and the required amounts for the payment obligations to be honoured.

The paper aims at highlighting the impact that the revenue and expenditure Budget has on the performance of a company and how it should adjust from one year to another, depending on the changes in the financial field, the increase or decrease of the gross minimum wage amount, as well as the changes in the field of work force, following the necessity and the opportunity to use the external work force outside the borders of the country.

Keywords

Budget, Revenue, Expenditure, Resources, Analysis, Performance, Management

JEL Classification

Z32, Z31

Introduction

Planning, providing the required financing and the possible sources of capital to be deployed, is essential for a company. Western companies do not undertake anything from the economic, technical, organizational, etc. point of view, without carrying out a "budgeting" of these actions, regardless of their size and significance in the general activity of the company. These concerns are naturally divided by those regarding compliance with

the provisions of their own budget, obviously to the limit when precisely the budget could become a constraint in increasing efficiency.

By budgeting, resources and responsibilities are established on specific activity centres. The budget represents the encrypted forecast of the impairment of resources and responsibilities on activity centres, in order to achieve the most effective strategic objectives of the company.

All the technical-economic, organizational decisions, adopted at the company level have the consequence of affecting the existing financial balance and require new balance, committing for this purpose changes at the level and structure of the required funds and their financing resources. Achieving the new quality of the financial balance requires the foundation on a higher level of the financial indicators by drawing up the revenue and expenditure budgets.

In order to achieve a clear management of the patrimony and the detailed control of the allocation of resources, it is presented the way in which the revenues and expenses were forecasted for the elaboration of the income and expenses budget.

Literature Review

Organizational performance is one of the most important variables and undoubtedly an important indicator of an organization success, regardless of the field of activity.

The importance of performance measurement results from its five essential attributes (Lohman et al., 2004):

- monitoring: measuring the performance actually recorded;
- control: identification and attempt to reduce the difference between the planned and the recorded level of performance;
- improvement: identifying opportunities for improving the current situation;
- coordination: providing information for the decision-making process and facilitating internal and external communication;
- motivation: encouraging continuous improvement of behaviour in the workplace.

The specialized literature in the field of performance features of hotel companies is relatively limited, being focused in particular on the implementation of the measurement systems based on the Balanced Scorecard methodology (Philips, 1999, Evans, 2005). The performances of the hotels are generated by different types of activities (services related to accommodation, services intended for customers who want to spend time there, as well as food services) and subsequently different cost structures and strategic orientations (Harris and Mongiello, 2014).

Most studies on performance measurement in the hotel industry are based on traditional financial indicators (Hoque, 1999, Philips, 1999, Anderson et al., 2000), since they characterize financial performance and their effects on overall performance.

The three indicators commonly used in the financial economy of hotel companies (revenue per available room, gross operating profit per available room and occupancy rate) have been criticized by some specialists (Enz et al., 2001) because they are not suitable for benchmarking studies. Other studies focus on performance evaluation based on indicators associated with accommodation operations (Wassenaar and Stafford, 1991) or revenue growth rate (Van Doren and Gustke, 2002). In order to overcome these problems, it is recommended to use the Balanced Scorecard method in measuring hotel performances (Huckstein and Duboff, 1999, Banker et al., 2005). Some of the authors refer to the Balanced Scorecard as a multidimensional measurement system or a performance evaluation system, emphasizing the interdependencies of the perspectives involved in the concept. Other authors focus on the contribution brought by the Balanced Scorecard in economic performance, to which, the consideration of a performance evaluation instrument which is a key factor in the success of hotel companies, is subsequently added.

The performance of the hotel companies is conditioned by the degree of integration of the new information and communication technologies in the decision-making processes and their activities. The development of information technologies for the hotel industry has led to the emergence of solutions involving the use of automation instruments for Front-Office and Back-Office activities, booking systems on the Internet, database management systems containing customer information, integrated in a single process that allows a hotel to respond more effectively to customer needs (Van Hoof et. al, 2006).

Methodology of the research

In order to achieve the objectives formulated on the thematic approach, the study will be based on methods specific to scientific research. The fundamental purpose of the methodology is to help us understand, in the broadest terms, not so much the products of science, but the process of knowledge itself. In order to be able to fulfill their function, the fundamental scientific research methods lead to applied research, defining the studied area, a series of principles and rules for conducting investigations, establishing the working instrument for data collection and interpretation, as well as construction strategies or theoretical reconstruction.

The methodology of the scientific research that we will use in this paper combines the qualitative research with the quantitative one, stating that the efficiency of the results obtained from the research would be greater if an optimal combination between the qualitative research and the quantitative one was achieved, in order to meet the objectives, set.

Generally, we will use the comparison method and the one of document analysis for data collection, the main method used to be the observation method, which is considered as the most common method in the research activity. The scientific observation means the careful and systematic pursuit of certain facts in order to detect essential or differential aspects.

Results of the research

DUNAREA HOTELS SRL is a limited liability company, with entirely private capital, which owns two hotels (MARA and STAR) and a restaurant that can satisfy some of the most demanding tastes from all categories of tourists, giving the possibility of spending holidays, leaves, or conducting conferences, symposia, business meetings.

The main object of activity of the company is: Hotels and other similar accommodation facilities, and as a secondary object of activity: Restaurants.

1. Revenue budgeting. In dimensioning the revenue and expenditure budget for 2020, the research started from the revenue achieved by the two hotel units in 2019. The revenue statement obtained, broken down by types of activities is presented in the two tables below. Starting from the breakdown of the revenue actually achieved in 2019 and the projected revenue to be achieved in 2020 for the two hotel units, the cumulative budget projected for the revenues part of the company, budget presented in Table no. 1, in dynamics for 3 consecutive years 2018, 2019 and 2020.

It was foreseen a 3% increase in 2020 of the revenue from the spa treatment activity compared to the one achieved in 2018 and 2019, considering the continued collaboration with the Health Insurance Fund for the settlement of check-ups and additional treatments.

We estimate for 2020 an increase in the number of tourists that will lead to an increase in the revenue from accommodation services, which include accommodation services with breakfast, service packages, and other organized events, as a result of the development of tourism products, with an accent on the SPA area by introducing new therapies.

Table no. 1 Centralized company revenue

Indicators	TOTAL (RON)			REBDG compared to
	2018	2019	BVC 2020	2019
- spa treatment	707.367	857.911	884.744	103%
- hotel accommodation	4.153.249	5.149.683	5.605.301	109%
- recreational services	230.355	247.801	251.069	101%
- rents	25.894	37.798	31.629	84%
-merchandise sales	4.384.394	4.996.552	5.589.454	112%
- other revenue	184603	110.670	18.504	17%
Total revenue from exploitation	9.685.862	11.400.414	12.380.701	109%
TURNOVER	9.501.259	11.289.744	12.362.197	109%

REBDG - Revenue and Expenditure budget

RON – Romanian Leu

In the case of rent revenue, no increases are expected and possible termination of the rental agreements in force has been considered.

For revenue from the sale of merchandise related to turnover, an increase of 592.902 lei is estimated as compared to 2019, as a result of the diversification of the products sold and the opening of the confectionery lab, by creating new confectionery, pastry and candy bar products.

We estimate a decrease in other operating revenue (revenue from sales of fixed assets and disposable assets, revenue from inventory charges and other operations), at a level of 18.504 lei in 2020.

2. Expenditure budgeting. For 2020, in the dimensioning of the revenue and expenditure budget, the research started from the expenditure actually achieved by the two hotel units in 2019. The situation of the expenditure classified by nature and destination, carried out in 2019 and forecasted for 2020, on the 2 units is presented in the table below.

The cumulative budget of the company estimated for the expenditure part, is built based on the previous calculations and is presented in the table below, in the dynamics for 3 consecutive years 2018, 2019 and 2020. For 2020, the expenditure was budgeted under the conditions of continuing the cost reduction program.

Table no. 2 Centralized company expenditure

Indicators	TOTAL (RON)			REBDG compared to
	2018	2019	BVC 2020	2019
material expenditure	637.332	655.765	670.831	102%
expend. with inventory items	201.000	156.736	157.548	101%
expend. with utilities	1.040.557	1.043.196	1.148.963	110%
expend. with merchandise	1.512.247	1.463.255	1.582.024	108%

expend. maintenance, repairs	338.327	255.506	257.449	101%
expend. with rents	-	8.557	-	-
expend. with premiums, insurances	23.300	17.038	19.900	117%
expend. with collaborators	271.260	271.582	303.811	112%
expend. with protocols, advertisements, advertising	67.070	47.991	48.070	100%
expend. with business trips	36.348	13.778	7.835	57%
postal expenditure	46.848	43.692	44.448	102%
bank expenditure	48.121	33.925	33.685	99%
other expenditure with third parties	763.488	757.707	795.160	105%
expend. with fees and taxes	701.341	644.441	644.937	100%
expend. with wages	3.493.389	3.839.063	4.429.594	115%
depreciation expenditure	1.560.384	1.597.143	1.595.340	100%
other expenditure	9.600	70.782	7.800	11%
provisions	-	-32.191	-	-
Total operating expenditure	10.750.612	10.887.966	11.747.395	111%

Material expenditure is estimated in 2020 at 670.831 lei, with an insignificant increase of 2% compared to the previous year, due to the efficient use of the material resources, at the same time with the increase of the economic activity.

In the dimensioning of the expenditure regarding the inventory objects, we considered their slight increase, since during 2019 the material base was renewed, the hotel units were equipped with usable inventory objects during 2020 as well, and the acquisition of new ones will continue.

The expenditure on energy and water, has been dimensioned based on the estimation of physical consumption, in correlation with the prices predicted for 2020, to ensure the temperature and the conditions of comfort to the parameters provided by law, in the accommodation spaces. We expect an increase of about 10% compared to the expenditure incurred in 2019.

The expenditure on merchandise, is directly proportional to the revenue from the sale of the merchandise and is estimated for 2020 at 1.582.024 lei, increasing by 8%, respectively 118.769 lei, compared to the achieved one for 2019. Their weight in public food revenue will be maintained at the same level as in 2019, respectively 29%.

Expenditure related to staff wages include expenditure with wages and related social security contributions. The dimensioning was made taking into account the legislative changes regarding the increase of the minimum wage at economic level, which will lead to an increase of all the wages with a percentage generated by the increase of the minimum wage, by granting overtime for the hours worked on Saturdays, Sundays and on all legal holidays. The increase of wages to a level that allows the stabilization of the workforce and the loyalty of the employees is considered. Moreover, due to the lack of staff in the national economy, the company has taken steps to bring waiters, chefs and maids from outside the community space.

Staff expenditure is thus estimated in 2020 at 4.429.594 lei, increasing by 15%, respectively by 590.531 lei, compared with 3.839.063 lei achieved in 2019.

3. Construction of the Revenue and Expenditure Budget for 2020.

The construction of the Revenue and Expenditure Budget started from the increase of the revenue as an effect of the marketing actions, of developing tourist products and not lastly from the increase of the quality of the services. However, the budget was construed in a prudent manner, due to the limited possibilities of increasing the revenue sources, considering, on the one hand, the competitive market in which the demand is somewhat defined in relation to the offer and on the other hand the limited resources we have in case of units requiring modernization.

The economic and financial indicators of the company included in the revenue and the expenditure Budget for 2020, compared to the achievements of 2019, are presented in the table below.

Tabel no. 3 Revenue and expenditure budget for 2020

Indicators	TOTAL (RON)			REBDG compared to
	2018	2019	REB – 2020	2019
- spa treatment	707.367	857.911	884.744	103%
- hotel accommodation	4.153.249	5.149.683	5.605.301	109%
- Spa& treatment	230.355	247.801	251.069	101%
- rents	25.894	37.798	31.629	84%
- merchandise sales	4.384.394	4.996.552	5.589.454	112%
- other revenue	184.603	110.670	18.504	17%
Total operating revenue	9.685.862	11.400.414	12.380.701	109%
TURNOVER	9.501.259	11.289.744	12.362.197	109%
- material expenditure	475.771	655.765	670.831	102%
- expend. with inventory items	143.458	156.736	157.548	101%
- expend. with utilities	965.963	1.043.196	1.148.963	110%
- expend. with merchandises	1.291.697	1.463.255	1.582.024	108%
- expend. with maintenance, repairs	262.324	255.506	257.449	101%
- expend. with rents	3.209	8.557	-	-
- expend. with premiums, insurances	22.698	17.038	19.900	117%
- expend. with collaborators	233.418	271.582	303.811	112%

- expend. with protocol, advertisements, advertising	42.926	47.990	48.070	100%
- expend. with business trips	14.499	13.779	7.835	57%
- postal expenditure	42.072	43.692	44.448	102%
- bank expenditure	39.112	33.925	33.685	99%
- other expend. with third parties	707.713	757.708	795.160	105%
- expend. with fees and taxes	694.092	644.441	644.937	100%
- expend. with wages	3.234.917	3.839.063	4.429.593	115%
- depreciation expenditure	1.572.829	1.597.143	1.595.340	100%
- other expenditure.	24.860	70.782	7.800	11%
- provisions	-170.808	- 32.191	-	-
Total operating expenditure	9.600.750	10.887.966	11.747.395	108%
Operating result	85.112	512.448	633.306	124%
Financial revenue	1.064	414	-	-
Financial expenditure	63.937	64.220	61,728	96%
Financial result	- 62.873	- 63.806	- 61.728	-
TOTAL REVENUE	9.686.926	11.400.828	12.380.701	109%
TOTAL EXPENDITURE	9.664.687	10.952.186	11.809.123	108%
GROSS RESULT	22.239	448.642	571.578	127%

In substantiating the revenue and expenditure budget, the observance of the following aspects has been considered in the research:

- increasing the quality of services and developing tourism products;
- practicing a flexible fee policy to stimulate sales during the off-season;
- launching special programs with facilities in the accommodation, recreational area and especially for events, part of improving the marketing activity and the sales;
- carrying out the revisions and repairs to the hotel units, for the efficient management of the utilities and ensuring the comfort of tourists;
- ensuring the facilities corresponding to the classification category of each tourist reception structure;
- monthly cost monitoring;
- periodic evaluation of employees and creation of an efficient payroll system and staff incentives, to increase the quality of the services provided.

Conclusions

The revenue and expenditure budget elaborated in the present paper, is an instrument available to the management as to ensure the proper development of the activities according to the established programs and objectives, to ensure the achievement of an efficient productivity, while also providing the intervention possibility along the way in order to correct some malfunctions.

If it is complied with, the revenue and expenditure budget ensures the achievement of the activity productivity and efficiency, regardless of the field.

The revenue and expenditure budget is the instrument without which the activity would be carried out chaotically, without any rule and financial discipline. A realistic and well-balanced revenue and expenditure budget, closely monitored by both the senior management and the executive, will provide in the end the guarantee that the balance of activities for one year is real and the expected one.

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NEW EUROPEAN UNION GREEN DEAL IN TOUGH TIMES OF COVID-19 PLAGUE

Zenon Foltynowicz¹

¹⁾ Poznan University of Economics and Business, Poland

E-mail: zenon.foltynowicz@ue.poznan.pl

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Abstract

The European Union has been trying for years to tackle the problem of progressive environmental degradation and climate change by introducing various types of strategies. With the creation of the new European Commission, another paradigm change occurred and the European Green Deal is to be a new European Union development strategy.

The overall objective of this paper is to make a case for the argument, that coronavirus Covid-19 pandemic will affect the implementation of the new EU green strategy.

On the basis of the review and critical analysis of source materials, the objectives of the European Green Deal will be presented in the article, as well as the diverse approach of different member countries to this new initiative.

As a result, the unexpected impact of a coronavirus pandemic on the implementation of this strategy is demonstrated. It can be concluded that the lessons learned from the crisis will help us return to the normal functioning of our societies and economies, and sustainable development after the end of the pandemic, if at all.

Keywords

European Green Deal, EU development strategy, coronavirus pandemic, Covid-19

JEL Classification

Q50, Q56

Introduction

The title of the article is a paraphrase of the title of the well-known novel by Gabriel García Márquez "Love in the time of the plague" (Spanish: *El amor en los tiempos del cólera*). The author describes a seemingly stable reality into which, however, from time to time cholera epidemics and civil wars creep in. The present (April 2020) situation seems to be similar, not just in the European Union (EU). The purpose of this article is to show how coronavirus Covid-19 pandemic will affect the implementation of the new EU green strategy.

The European Green Deal proposed by the European Commission (EC) at the end of 2019 was to lead to such a stable reality by 2050. Europe is to become the first climate-neutral continent by 2050 (EGD, 2020).

For years, the European Union has been trying to fight the problem of progressive environmental degradation and climate change by introducing various types of strategies. We had IPP - an Integrated Product Policy, a Europe of "recycling", a Resource Efficient Europe (Muradin, 2019). In 2012, the strategy of bioeconomics, otherwise known as the bioeconomy or the green economy, was pompously introduced (Carus and Dammer, 2018). It was trusted that if the large-scale introduction of bioplastics - biodegradable, compostable, generally "organic" – began, the problem of waste packaging materials will be solved. Bioeconomy was a response to the need to implement a Sustainable Development strategy following the Rio Declaration (EC, 2019a).

As part of the implementation of the Sustainable Development Strategy, it was stated that the traditional, linear consumption model should be abandoned and instead a closed-loop approach should be applied. And so the idea of a new economy was born, commonly known as the circular economy (CE) (Ellen MacArthur Foundation, 2013). As part of this trend, the slogans "Europe without waste" or "no packaging solution" appeared (COM, 2014). The European Union quickly got involved in the CE, seeing it as an opportunity to support the sustainable development strategy (EC, 2015). Among other things, the European Commission set a target of 2030 to increase the recycling of plastic packaging stating that "the only long term solution is to reduce plastic waste by recycling and reusing more." (EC, 2019b). A European Strategy for Plastics in a Circular Economy (EC, 2019b.) is a derivative of Ellen MacArthur Foundation *The New Plastics Economy: Rethinking the future of plastics* Ellen MacArthur Foundation, 2018. Among the strategy points, several of them directly concern packaging. The assumptions of the strategy are already generally known. The strategy's goal is, among others, to ensure that all plastic packaging will be recyclable by 2030 (EC, 2019b). It is also expected to contribute to achieving the goals of Sustainable Development and the Paris Agreement by 2030 (EC, 2019b).

At the same time, bioeconomics is also gradually transforming into a circular bioeconomy (Carus and Dammer, 2018). In parallel with the implementation of the Sustainable Development strategy, the fight is underway to reduce greenhouse gas emissions to prevent climate change. It is necessary to reduce CO₂ emissions to prevent an average temperature rise of 2 °C by 2050 to avoid a climate catastrophe. At the COP21 summit in Paris, world leaders pledged to stop global warming at 1.5 °C by the end of the century. However, actions taken so far do not seem to be sufficient. With the above in mind, let's consider what actions should be taken to successfully implement EU Green Deal when hopefully the pandemic is over?

New paradigm

On November 28, 2019, the European Parliament announced a state of climate crisis through a special resolution (EP, 2019). In this document, Parliament called on the European Commission to act decisively in the area of climate and environmental protection. EU should cut emissions by 55% by 2030 to become climate neutral by 2050 as well as reduce global emissions from shipping and aviation. EP decided to set an example in the adopted document and undertook to replace the vehicles he used with zero-emission ones. He also called for the establishment of one seat for the EP, as MEPs are constantly traveling between Brussels and Strasbourg. As many as 429 MEPs voted for the resolution. This shows that the EU institutions are starting to take the topic of climate protection seriously. This shows how important climate is on the political agenda of the European Union.

With the creation of the new European Commission and the entrustment of Ursula von der Leyen as the President, another paradigm change occurred leading to The European Green Deal as a new EU development strategy. Goals that can be found in the European Green Deal are the following (EGD, 2020):

1. Achieving climate neutrality by 2050 - The Commission was expected to present a draft of the first-ever European climate law in March 2020;
2. Protection of human life, animals, and plants by limiting pollution;
3. Supporting companies on the path to global leadership in the field of clean products and technologies;
4. Ensure that the transformation takes place fairly and inclusively.

To achieve these goals, it will be necessary, among others, to reduce the emission of the energy sector, thermo-modernization of buildings, supporting the development of the green economy (through investments in ecological technologies, such as renewable energy sources, recycling) and the introduction of clean forms of transport (e.g. electric vehicles). The implementation of this strategy will entail huge financial outlays, which may be difficult for many national economies to bear.

A new financial instrument supporting those EU countries for which decarbonization is a particularly difficult challenge is to be the Just Transition Fund, which will count EUR 100 billion (EC, 2020a). They will be allocated to energy transformation mainly in the countries of Central and Eastern Europe in the next seven years.

The Commission also planned to implement the Sustainable Europe Investment Plan, under which the EC will invest EUR 260 billion a year (EC, 2020b).

Poland, initially also Hungary and the Czech Republic, raised objections to the New Green Deal. What were Poland's fears? As we know, Poland's energy mix is based on 90% on coal energetic, emitting CO₂ amounts to 1,433,105,066 tonnes CO₂eq. annually (KOBIZE, 2020). The government decided that moving away from coal energy in such a short time and switching to renewable energy would be practically impossible. Are these fears valid?

Here I would like to raise the following two issues. Initially, CO₂ emissions were regulated by the Kyoto Protocol, which proved to be inefficient and which we are slowly forgetting (Napoli, C., 2012). The second case: the cause of the destruction of the ozone layer turned out to be freons. In the fight for the prevention of the formation of an ozone hole, the implementation of the Montreal Protocol has proven successful, requiring the withdrawal of freons from use and replacing them with ecological substitutes (Wachowski et al, 2001). We are now hearing less and less about this problem, and the hole in the ozone layer has recovered (UN, 2018)!

An interesting thing from the past is also the so-called National Emission Ceilings Directive (EEA, 2001), which was introduced to reduce SO₂ emissions, mainly to prevent acid rain. The assumptions were radical, namely the reduction of emissions was to be as much as 35%. For Poland, at that time it was not feasible because many species burned in coal power plants are highly sulfated. Also, crude oil imported to Poland contains large amounts of sulfur.

The problem seemed impossible to overcome. However, Norwegian funds came to the rescue. Poland used them for pro-ecological investments, including for flue gas desulphurization from power plants. Thanks to the installed installation, not only SO₂ has been captured completely, but also huge amounts of gypsum were obtained (byproduct), which are used by construction. In this way, Poland has met the requirements of the "sulfur directive" in 2010 (OECD, 2015). Besides, sulfur is extracted in the Lotos refinery in such quantities that meet the needs of the Polish chemical industry! For this reason, it was possible to close the sulfur mine in Tarnobrzeg!

It should, therefore, be hoped that also this time fate will smile at Poland, the government will make the right decision about joining New Green Deal, which will allow Poland to benefit from significant financial support, especially for moving away from coal. As already mentioned, in the case of Poland it will not be an easy process, even though coal production in Poland is falling. In 1993, 131,000 tons of coal was mined, and in 2019 it was over half as much - 61,000 tons. In recent years, however, imports have increased from both Russia and even Australia! The future of coal in Germany, Poland and the Czech Republic, the

European coal heartland, have been explored by Osicka (Osicka et al., 2019). The Czech Republic, Hungary, and Poland – all coal-reliant countries – want to win financial guarantees before backing the Green Deal.

Indeed, initially, the Polish government intended to go at its own pace. However, the latest (beginning of April) announcements indicate that it will support the assumptions of the New Green Deal.

The European Green Deal

The new European Commission President Ursula von der Leyen announced the European Green Deal on the 11th of December, 2019 (EC, 2019d).

The figure below illustrates the various elements of the Green Deal.

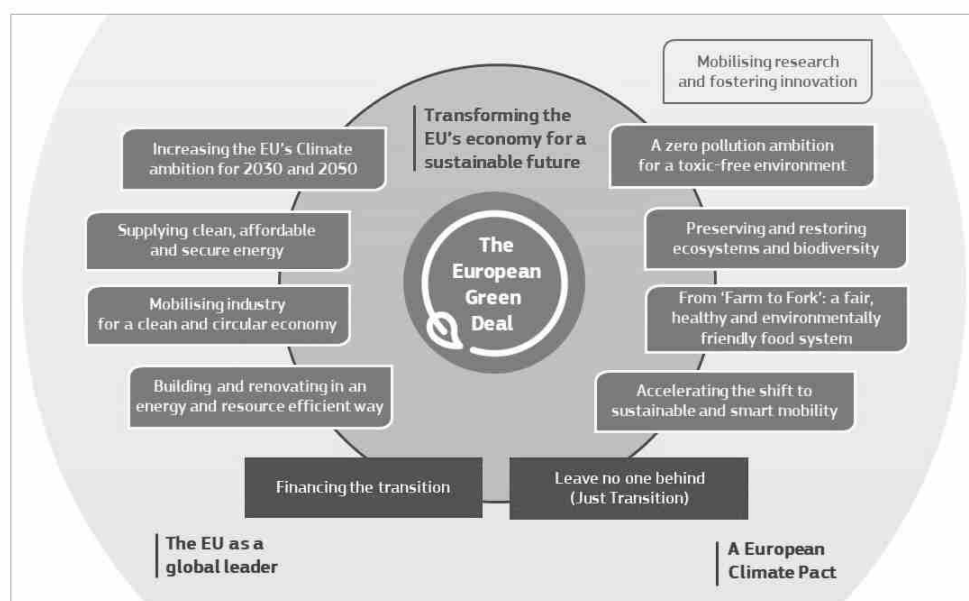


Fig. no. 1 The European Green Deal

Source: COM, 2019

A description of the strategy elements concerned can be found in the EC Communication (COM, 2019), therefore they will not be discussed in detail. Only two important points will be mentioned: the new climate policy and support for the circular economy. Circular Economy is claimed as the number one priority of the European Green Deal (ECOS, 2019). To make the circular economy a reality, the next Circular Economy Action Plan (CEAP) had been expected in March 2020 (EC, 2020c). In a new CEA Plan for a Cleaner and More Competitive Europe legislative and non-legislative measures targeting areas, where action at the EU level may bring real added value, were planned (EC, 2020c). In addition to CEAP, in March 2020 they were to be presented, among others, Proposal on a European 'Climate Law' enshrining the 2050 climate neutrality objective, EU Industrial Strategy, EU Biodiversity Strategy for 2030, and the European Climate Pact launched (EC, 2019c).

A bull in a china shop

However, "a bull in a china shop" suddenly appeared! Maybe not literally "a bull", but something tiny, namely a virus in Chinese Wuhan. Initially underrated, it turned into a pandemic. Fate likes to mock ambitious plans, including achieving climate neutrality by 2050, and in this case, he did it with a coronavirus. It poses the greatest threat to public health, which entails a serious threat of a painful economic recession as well as other consequences. Questions arise about how has the pandemic and resulting economic meltdown will affects markets for renewable energy, clean transportation, sustainable food systems, and the circular economy (GreenBiz, 2020)? How and how much will their development and deployment be hampered? It's a mixed bag, with some technologies suffering and others continuing their relentless growth. For example, the originator of the Zoom platform, which became extremely popular in the era of e-learning during home quarantine, unexpectedly became a billionaire.

GreenBiz analysts (GreenBiz, 2020) expect in the coming months' dynamic market changes. They (GreenBiz, 2020) wonder, among others:

- How the record-low price of oil is impacting markets for EVs and clean-energy solutions as well as recycled plastics
- How the virtual shutdown of foodservice operations and restaurants is changing consumption patterns and disrupting food waste programs
- How the economic downturn is impacting venture investments in clean technologies
- How volatile energy markets will impact the uptake of clean energy and transform corporate procurement options
- How recycling and materials recovery systems are shifting due to health concerns
- The changing dynamics of reusables in the age of contagion

Skeptics say that the European Green Deal has no chance to take off in the first half of 2020. It is simply unreal because of the crisis ahead. Citizens will expect economies to return to normal levels and activity as soon as possible, whereas Climate Policy will put a heavy burden on national economies, while money is needed today for citizens and businesses to counter the effects of the coronavirus.

The leaders of the 27 European Union countries during the last (26/03/2020) meeting of the European Council (Consilium, 2020), which due to circumstances had to be held remotely, agreed that the coronavirus is the Community's most pressing problem and the reconstruction of the European economy should be based on very specific principles. The priority now is to fight the coronavirus pandemic and its immediate consequences. The Commission reacts with a proposal for a Coronavirus Response Investment Initiative that will provide 37 billion euro of investment under cohesion policy to address the consequences of the crisis. 7.5 billion euros are to be launched immediately.

However, supporters of the European Green Deal say that it will not be an economic burden at all, but a solution that will alleviate the coming economic crisis. Investments that are part of climate policy are perceived by them as a kind of anchor of stability, which the entire European Union has been preparing to adopt for years, adopting regulations and obligations, such as climate law, which aims to make the goal of climate neutrality by 2050 irreversible to give confidence to private sector investors.

Unexpected coronavirus environmental effects

Industry lockdown due to the coronavirus has unexpected positive environmental side effects. There's an unlikely beneficiary of coronavirus: The planet (CNN, 2020). Coronavirus temporarily reduced China's CO₂ emissions by 25 percent over the first four-week period as well as a dramatic reduction in nitrogen dioxide emissions was observed (IEEE, 2020). Coronavirus could trigger the biggest fall in carbon emissions since World War Two,

however, the decline could be short-lived (Weforum, 2020). Also, air pollution has decreased in urban areas across Europe during the coronavirus period (Reuters, 2020). For the first time in almost 30 years, residents in the Punjab, northwestern state of India can actually see the Himalayan Mountain Range (Sarakshi Rai, 2020). There are reports of other similar phenomena from around the world.

Conclusions

The European Green Deal is to be a new European Union development strategy. However, its implementation from the beginning of 2020 was unexpectedly interrupted by the outbreak of the coronavirus epidemic. Due to the necessity in lockdown, it has a significant impact on the global economy, which falls in crisis. The article deals with Green Deal only for the EU. It should be noted, however, that the issues of climate change mitigation are also present in the election programs of US presidential candidates. The Green New Deal and China's Green Revolution also are affected by Covid-19 pandemic.

The issues of coronavirus pandemic impact discussed not only on EU New Green Deal but also on other aspects are very actual topics, so this is a research contribution to the literature. However, we should begin to prepare the necessary means to return to the normal functioning of our societies and economies and sustainable growth, taking into account, inter alia, ecological and digital transformation and learning all lessons from the crisis. This will require a coordinated recovery strategy, a comprehensive recovery plan, and unprecedented investment.

However, the question arises what will happen to climate change mitigation policies, when big industries and major national economies of the world want to rapidly speed up the production and growth after the lock-downs are over? Are we simply going to back to intensive emissions increases and other unsustainable business and policy practices that directly or indirectly created the current crisis? COVID-19 is a very clear example of the interdependency and the mutual feedback loops between environmental, economic, and social dimensions of sustainability.

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EXTRA KILOGRAMS AND OVERWEIGHT AS ECONOMIC THREATS

Raluca-Ecaterina Brandabur¹, Daniel Moise², Bogdan Georgescu³ and Mihai Adrian Felea⁴

^{1) 2)3) 4)}The Bucharest University of Economic Studies, Romania

E-mail: raluca.brandabur@gmail.com; E-mail: moisedaniel@mk.ase.ro

E-mail: georgescubogdanmk@yahoo.com; E-mail: mihai.felea@com.ase.ro

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Abstract

The level of development of the countries of people origin is another determinant of the degree of obesity. Thus, Gallus in a study in some European countries found that in high-income countries, adults with the highest level of education have the lowest prevalence of obesity. The treatment for obesity is difficult. Strategies in order to cure obesity are hard to monitor and not very effective, mostly are based on diet and exercise. The best solution at this stage is obesity prevention, particularly by promoting a healthy lifestyle. In order to achieve the goals regarding proper management of obesogenic environment, affected by untrue information about nutrition, surface the need for investment in professional human resources regarding nutrition, not only for health professionals, but also for other professionals that might influence food consumption, namely, teachers, social care professionals and food service personnel.

Keywords

overweight, nutritional education, extra kilograms, economic threats.

JEL Classification

D1

Introduction

Healthcare expenditures have dramatically increased in the last 20 years due to three factors: (1) an increase in costs per obese individual; (2) a population increase, so even if the prevalence of obesity remained constant there would be more obese individuals; (3) an increase in the prevalence of obesity. (Biener, Cawley and Meyerhoefer, 2017). Only in the USA, the share of total health care spending of non-institutionalized adults that is devoted to treating obesity-related illness has risen from 20.6 % in 2005 to 27.5 % in 2010 to 28.2 % in 2013.

At the same time, not only the healthcare budgets were affected, but all economic costs were increased because, according to the components of the economic costs of overweight and

obesity include: direct costs resulting from the treatment of obese nutritional status and its co-morbidities, and indirect costs caused by the lost productivity due to work days lost and premature mortality of obese people (Dee, et al 2014). Such costs will affect state functions, not only in financial terms, but also in the level and the way of development.

The whole process is described into the figure number 1.

Main environmental triggers of Obesity (OB) were identified Hill and Peters (1998); Jeffrey and French (1998) and Brownell (2002) as: the increased use of automobiles and public transportation systems which encourage inactivity/low physical activity, while increased time spent watching television, playing electronic games, and/or using computers which favoured the rise of sedentarism as obesogenic behaviour of both adults and children

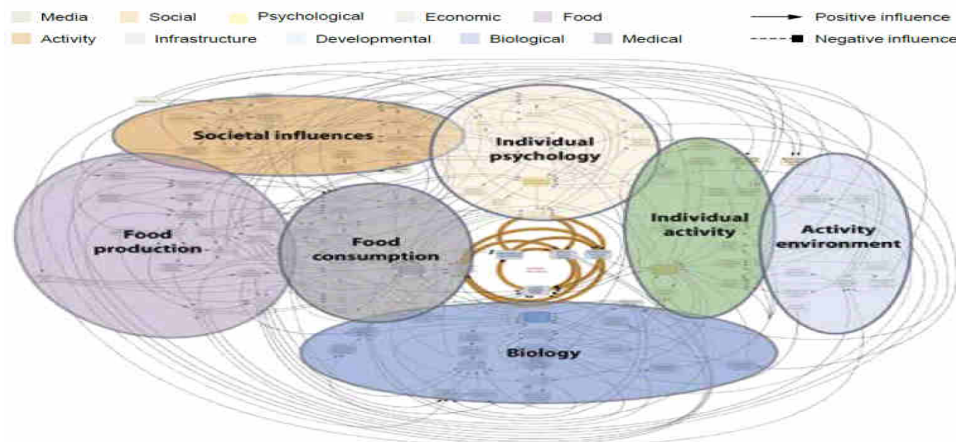


Fig. no. 1 Obesity causal map

Source: Butland B. et al., *Foresight: Tackling obesity—future choices*, UK Government Office for Science, project report, 2nd ed., October 2007

The level of development of the countries of people origin is another determinant of the degree of obesity. Thus, Gallus (2014) in a study in 16 European countries found that in high-income countries, adults with the highest level of education have the lowest prevalence of obesity.

The EU-funded research consortium EATWELL (Interventions to Promote Healthy Eating Habits: Evaluation and Recommendations) (2009-2013) has classified policy interventions into two broad categories: (a) measures supporting informed choice; (b) measures changing the market environment. Informed choice is the basis for consumer personal choices. Measures included in this category are nutritional education programs, nutrition labelling, social marketing (information from the State) and restrictions on commercial advertising. Measures to change the market environment are public and governmental. Those are directed to create a legal format for: food standards to regulate nutrient content of foods, taxes and subsidies on unhealthy foods or nutrients, regulation of the foods available in school or workplace canteens and measures to make healthy foods more readily available to low income households. We can observe another category (a third). This category was created for measures not specifically targeted at healthy eating, but inadvertently influencing people dietary habits along with other general (generic) measures that are encompassed in the population choices of food.

Capacci et al. (2012) have made an analysis which considered 129 policy interventions (of which 121 were in Europe) with the aim of covering all potential types of policy action listed in Table 1 (affecting healthy eating) and revealed the degree of impact/ the effectiveness of each policy.

The study revealed that United Kingdom, Scandinavian countries and France as a newcomer, are the only countries in which the systematic healthy eating policies are implemented, beside the other information campaigns. The policy action of the Mediterranean countries, which is mostly limited to educational and informational measures, has a quite short history. More than this, the resistance to the development of obesity is developed by the individuals and groups through a powerful behaviourally component related to the cognitive restraint of food intake, but also through a cultural constituent. This is revealed by the way, in which a physical activity is constantly maintained, by various practices that lead to restriction of food, but also through higher ideals of moral and status valence. Other causes that lead to obesity/overweight are environmental, diet, alcohol drinking, lack of physical activity, but also the genetic one.

Table no. 1 Number and Type of Diet and Health Measures in the EU

Policy classification	Total no.	No. in Europe
<i>Interventions supporting more informed choice</i>	86	82
Advertising controls	6	5
Controls on advertising to children	5	4
Controls on general advertising	1	1
Public information campaigns	39	38
Nutrition education	35	35
For children at school	31	31
For adults/general public (e.g., at workplace)	4	4
Nutrition labeling	5	4
Nutrition information on menus	1	0
<i>Interventions changing the market environment</i>	43	39
Fiscal measures	4	3
Tax/subsidies on foods to the population at large	1	1
Subsidies to disadvantaged consumers	3	2
Regulation of meals	15	14
School meals (including vending-machine bans and provision of free fruit and vegetables)	13	13
Workplace cafeteria meals	2	1
Nutrition-related standards	1	1
Government action to encourage private-sector action	10	9
Measures to increase availability to disadvantaged consumers	2	2
Liability laws	1	0
<i>Interventions not explicitly targeted at healthy eating</i>	4	4
Generic interventions	6	6
Total	129	121

Source: *Eat Well, Effectiveness of policy interventions to promote healthy eating and recommendations for future action: evidence from the EATWELL project*, [pdf] - http://eatwellproject.eu/en/upload/Reports/Deliverable%205_1.pdf

Despite the negative situation (almost half of adult population is OW or OB), overall Europe, obesity patterns in Europe remain substantially more favourable than those in the USA (Gallus, 2015).

Data analysis

➤ Romanian children eating habits - Children eating habits are in strong relationship with their parents “normally, they eat what we eat”, “the child eats what we have in our fridge”, “sometimes we eat at home, at our parents when visiting or out - downtown”. The situation is somehow different when we, the children, are preadolescents or adolescents, because peers influence and strong desire to “eat out”, many times means eating at fast foods. In this situation, the parents have less control about the food and cannot restrict the children’s diet, because of the social importance of the “eating out” for adolescents.

➤ Family eating habits - The Romanian food consumption is strongly related to the tradition. In small and medium towns, like those included into the study, there is a reliable evidence of this fact. Facts we have discovered: 2 or 3 meals a day, a traditional menu (sour soups, cabbage rolls, polenta, beans, potatoes etc.), homemade cookies, seldom, or no salads, fruit as dessert. This pattern is reinforced also of the medium to poor income, who cannot afford expensive food (red meat, fresh vegetables outside season or fresh fish are some of them). The Romanians consume quite a few fresh vegetables and fruit. As many studies have

shown before, parents are highly influential factors for their children in different areas, including food habits.

➤ The Romanian OB/OW children meal patterns compared to healthy foods patterns - The children nutrition is restrained at the information provided by MD when the diversification of the child (when this one was less than 1 year of age) and sometimes, when there occurred a medical problem (including OB/OW) within the family, and advice is asked of MD, or somebody in the family (a mother) has voluntarily searched for nutrition information, usually on the Internet. Sometimes the interviewed women mentioned TV entertainment, or educational cultural programs as the source of information: "I have seen and listened to personal experiences and information from invited stars, medical professionals, fitness trainers, etc.". after the TV shows, more educated these and particularly, in this case, not necessarily, wealthier mothers deal better with "difficult" nutrient's consumption like fats and carbohydrates

Overall, the main nutritional claims of questioned mothers were: "not too much salt," "less sugar, if possible", "eat what we eat because we are 1 year old".

- people perceived as nutritional experts - As previously mentioned those are: MD especially for early ages, TV stars, fitness coaches, nutritionists with or without medical studies. The information from them is rather tangential rather than deliberately sought. There have been situations where mothers admitted that they themselves are overweight and that they are looking for solutions to reduce their weight

- marketing elements considered to be appropriate in relation to educational nutrition in Romania -Spontaneously, few mothers (3) have recognized that they have overweight children and this fact could be a problem. Because the discussion focused on diet and nutrition, some mothers have recognized that they have "plump/chubby" children, but they have put this aspect on the age problems considering that the situation will be corrected as they grow up. Basically, mothers do not realize or avoid discussing about their children's nutritional issues. This aspect, coupled with the lack of interest / documentation on nutrition and the lack of professionalism of the sources of information to which they pay attention, leads to the conclusion that the only practical solution at present in Romania is the education of both mothers and children. First of all, it is necessary to educate people in order to recognize the trustworthy sources of information. Once the sources of information are set correctly, a step-by-step nutritional education, starting from the elementary notions, must be achieved.

- investigating obesogenic environment - Many children spend most of the time without doing exercise /they event do not go to physical education classes in school; eat fast food, or unhealthy food (e.g., fried potatoes), spend a lot of time on TV, have almost always unhealthy snacks (sweet or salty), spend a lot of time on the computer, or with other devices (phones, tablet). "the today children are lazy, they don't run, just watching TV or playing games on various devices or surfing Net", "they don't want to eat healthy food, just junk food". Mothers seem not to understand their responsibility for their children is action, blaming only the children for the lack of physical activity and unhealthy food habits.

- the types of arguments/media channels able to influence the children to form opinions on healthy eating. According to mothers' opinions, trust worthy sources of information for their children in order to accept nutrition advice and health food proposals could be TV programs and school teachers. "if they say it on TV they trust in it", "what I say is less important, important is what say and do their colleagues", "the school teachers are very important, she spends a lot of time in school".

Furthermore, the children's usage of new technologies and communication channels (digital/social media) could be turned into a positive way, by transmitting useful nutrition information. "they have a phone, or a device all day long in their hands", "children use devices at every free moment"

- the types of arguments/media channels able to influence the mothers to form opinions on healthy eating - Due to the rest of the data provided, authors have abandoned this research objective. Until mothers would be able to correctly identify the valid sources of information, marketing approaches to healthy nutrition are designed for failure. Maybe some national/social campaigns in order to raise awareness to the health issues linked to the nutrition and in order to show/explain what are the trust worthy sources of nutrition information, could make a notable difference. Then digital/social, media must be widely used, trying to transform its communication networks into a reference for the general population to search for information on food and nutrition.

- distinctions between the children's level of influence over the food consumption at different age intervals. The mothers of teen and pre-teens have signalled the influence of teen's social groups. "they eat same things, they wear similar things, they talk in the same way".

- the level of trust in the Ministry of Health and Ministry of Education, particularly related to the nutritional tutorials/programs for children. The level of trust in the state institutions responsible for such a program, the Ministry of Health and Education, is extremely low, mainly owing to the lack of coherent and responsible macro-social policies. This lack of responsibility of the government is clearly seen through the precarious (poor equipment, lack of trained personnel, lack of consumables, sometimes etc.) situation of sanitary and educational institutions, frequented by the population.

The main factors that influence and lead to overweight, can be considered the following:

- **Mother's income and level of education** -Previously studies have shown the importance of mother's education in influencing the child's nutrition, but mainly by means of the opportunity given by education to achieve a higher socio-economic status. The studies have also shown that simply by giving advice, or even obliging a child to accept healthy food, without "demonstrating" /eating it parents themselves, means a dead end in nutrition education. The worst results were given by coercive methods. Women's income does seem to be associated with household expenditure patterns and that income and education erase the eventual risk introduced, for example, by the fact that the child is living in a single parent family (Miller and Rodgers 2008, Pierre-Louis et al., 2007). This statement is especially true in a traditional society like Romania, an East European country where the child care and food preparation are still women's tasks in the household (Popescu, 2009). As a result, more educational programs, regarding first of all, basic principle of nutrition, than general information about nutrition have to be put in place and have to target women with children.

- **The socio-economic condition of the parents** - At this time, a good nutrition is ultimately a problem of due material resources. The medium to low income of parents is reflected into OB/OW status of Romanian children. There are significant differences between the amount spent on food in United States and Europe, for example between 2002-2003 the American urban citizens spent around 10% of their income on food (Blisart and Stewart, 2007) while European citizens combined spent an average of 22% of their income on food in the late 1990s (Robertson, 2001). For the Eastern European countries, the situation is even worse, the citizens of Romania, Bulgaria and Lithuania spent around 50% while those of Czech Republic, Slovakia, Poland and Latvia something in between 30% and 40% (Robertson, 2001). Given the context, the purchase of high-energy food, but at the same time, poorer in micronutrients is more affordable for the people belonging to lower economic classes, the higher quality food being limited by the income. However, the national food balance for the Eastern European countries in terms of dietary energy availability, between 1992 and 2005, has remained unchanged despite the increased wealth (Ulijaszek and Koziel, 2007).

- **Those responsible for the nutritional education/ communication process.** – In what concerns the nutritional education for children, the main responsibility rests, as it is

normal, with the parents, but they should not be the solely responsible, there is also a public involvement, like any other type of education and both of them must converge in the same direction. Bringing together the structural and behavioural changes that allow the individuals to discern the right choices requires an in-depth and multiple levels analysis. The private sector uses complex manipulative techniques to influence the consumer's choices, inspiring various informative channels that, in the end, will conduct to changes into the individual's behaviour. The recommendations and communication in terms of nutrition should have a dual existence: they should be firm and flexible at the same time. The term 'firm' means simple and understandable, while 'flexible' is used to give enough room for customized solutions. The trust is extremely important and it is involved in a successful communication, having to answer to major questions like "who? and whom?" people trust in the end. The accelerated rhythm of research will produce continuous results about the correct nutrition, which could contradict previous recommendations. In terms of communication, one of the most used channel is the television, but this one is only suitable to target different groups like adolescents, young mothers or elderly people who are very well defined in the structure and the content of the programs (Lücke and Rössler, 2005). Other communication channels, like brochures, seminars, internet courses for nutritional education are more narrowed and they address a limited number of people. On the other hand, television has a broader audience and succeeds in raising the awareness about nutritional education which is a precondition for the motivation to ask and get further information. However, the television is still under-exploited even today, it has a serious potential to educate the children and help parents and schools to improve eating behaviours (Grabovschi and Campos, 2014). As we found, in Romania, the main source of information influencing the SRs of the children is the mass-media. Grabovschi and Campos (2014) explains why the SRs of unhealthy food in Romania is more widely spread than their SR of healthy food, compared to Canada, where the school is the primary source of influence and SRs of healthy and unhealthy foods are more balanced.

➤ **Obesogenic environment** – The Romanian OB/OW children live into an obesogenic environment. The OB/OW problem cannot be solved outside understanding and controlling the so-called the obesogenic environment, that means whole constraints/ web of multiple environmental pressures on individual choices (Battle and Brownell, 2002). Obesogenic environments not only discourage physical activity, but also encourage inactivity both occupationally and during leisure time (Brownell, 2002; Hill and Peters, 1998; Hill and Wyatt, 2005). Educating the public unless the obesogenic environmental factors are modified generates almost no impact. Educating the obesogenic environment is a very complex work that requires fine strategy, a considerable amount of time and money. Ferro-Luzzi (2005) argues that this strategy is only operational by the involvement of a large number of stakeholders from diverse segments of society as a crucial prerequisite due to the complexity of the environment. At macro and mezzo-social level state, local governments can take action in order to redesign the obesogenic environment through street and neighbourhood design, plans for parks and community recreational facilities, locations of retail food facilities. At micro-level, each unit of the food, beverage, restaurant, entertainment, leisure and recreation industries share in the responsibilities for obesity prevention and may be induced in supporting this goal (Koplan, Liverman and Kraak 2005). From social/sociological point of view, it is not fair to put the entire responsibility for the individual counterbalance of obesogenic environment through purposive exercise in school, at home, in gymnasiums and in open air sports, because those kinds of actions are specific to privileged and especially motivated subgroups, the wealthy and educated. For medium and low-profile people's opportunities to exercise - in terms of accessibility, affordability and awareness of its health value are low and competing needs - in terms of money and time pressure and preferences - e.g., TV viewing, other passive leisure which are many and powerful. The Romanian society as a whole must be aware of the complexity of correct nutrition and associated elements. Any

adequate marketing plan of policy makers or other organizations interested should take into consideration any of following aspects (Figure no. 2).

During the last period, OB/OW has increased (WHO, 2018) and brought to the surface the problem of misinformation on nutrition issues parallel with growing interest in healthy eating.

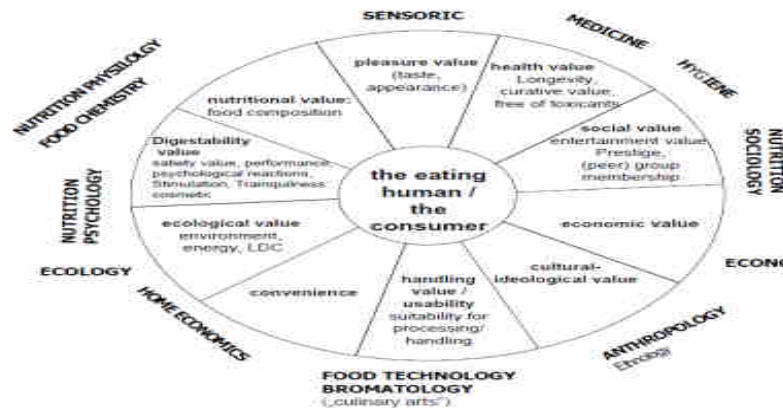


Fig. no. 2 Different views on food choices by consumers and scientists

Source: Oltersdorf, U., 2005, *Consumers research in the field of nutrition – “hard” and/or “soft” science*, *Consumer & Nutrition Challenges and Chances for Research and Society 9. Karlsruher Ernährungstage – 9th Karlsruhe Nutrition Congress 10. – 12. Oktober 2004 in Karlsruhe*

In order to achieve the goals regarding proper management of obesogenic environment, affected by untrue information about nutrition, surface the need for investment in professional human resources regarding nutrition, not only for health professionals, but also for other professionals that might influence food consumption, namely, teachers, social care professionals and food service personnel. Rankin et al. (2016) ask for reliable policy, economic regulation interventions and strategies to prevent OB from affecting future generations.

Conclusions

There are limits on the use of a sample of obese or overweight children aged between 6 and 14 (out of a total of 0-17 years) coming from the middle-income families living in small urban areas. Behaviour in similar large urban ages and with similar, or above average, or similar income may be dramatically different, mainly due to the options / facilities offered or their quasi-total lack in rural areas. The main goal of such macro, mezo and micro-social and economic actions would be an improvement in the children's eating habits, to such an extent that the coming generations would be stronger and healthier both physically and mentally. As a final conclusion, our research paper subscribes to Grabovschi et Campos (2014) point of view, who consider that “Romanian children would benefit from the implementation of culturally adapted nutritional education programs in schools' curriculum”.

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THE EFFECTS OF THE FEAR OF FAILURE ON THE SUCCESS IN THE BUSINESS ENVIRONMENT

Cristina Mariana Ene (Vasile)¹, Cosmin Viziniuc² and Mariana Vasilica Bigea³

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

E-mail: cristinamariana_vasile@yahoo.com; E-mail: viziniuc.cosmin@gmail.com

E-mail: marianabigea@yahoo.com

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Abstract

The authors start from the idea that entrepreneurial success is the result of a complex process that involves different experiences, some of them negative, associated with failure. In this context, the goal of this research is to examine through a behavioral model, the process of business evolution from failure to success. A set of economic and non-economic factors that influence the entrepreneurial environment is presented. By using partial observation of statistical data from 20 Member States of the EU, collected from a secondary source - Global Entrepreneurship Monitor 2018/2019, the authors conduct, through a descriptive research, an analysis of the fear of failure, as the main obstacle to business survival in any entrepreneurial ecosystem. The results of the study reflect the negative relationship between the exogenous variable, fear of failure (FFR) and the two endogenous variables that express the entrepreneurial success – the rate of starting a new business (TEA) and the rate of creating new jobs at 5 years (HJCE).

Keywords

Success, bankruptcy, opportunity, fear of failure, failure, experience, business environment

JEL Classification

G33, L25, L26, M 21

Introduction

The entrepreneur is a person who identifies an opportunity - which others have not noticed - and turns it into a business. In principle, he rejects the security offered by the workplace in a large organization, innovates, creates value, thus accumulating capital. Just accumulating capital is not a sufficient motivation for starting a business. Success, however, can be a much stronger motivation! The approach is based on factors that go beyond income and wealth. If you have money it does not mean that you are successful. Success is a journey!

(Taşnadi & Paicu, 2011). Success is the motivation of the ambitious. It includes, at the same time, freedom of action, the possibility to enjoy the intrinsic characteristics of the work (Nielsen & Sarasvathy, 2011), the feeling of professional achievement, intellectual stimulation, recognition from society.

Often, the path to business success is fraught with defeat. Failure is a difficult event, which may be complicated to manage, but at the same time a valuable experience for an entrepreneur (Atsan, 2016, Cope, 2011). In this research, we review the series of factors that influence the outcome of the entrepreneurial actions, paying a special attention to the extra economic variable, fear of failure.

Entrepreneurial action between failure and success

"Most of you will fail, will be treated with contempt, will be thrown into poverty, but we are grateful for the risks you take and the sacrifices you make for the sake of the economic growth of the planet and for removing others from poverty" (N.N. Taleb).

According to statistics, the survival rate of small, newly established companies gravitates, after five years, around 50%, globally. Only a third of them continued to exist after 10 years. This is not an encouraging image of entrepreneurship! So how can one explain that one in ten adults is keen on pursuing the entrepreneurial dream? Studies show that those who start their first business are, in general, individuals with a propensity for risk, open to experimentation, emotionally stable (Kerr et al., 2017), capable of recognizing or discovering and exploiting opportunities (Shook et al., 2003; Valliere, 2015).

Turning a non-entrepreneur into an entrepreneur is a progressive process achieved through several successive steps, some of which may be wrong. Thus, failure is a result of the accumulation of erroneous decisions, in different contexts. However, the experiences of the entrepreneurs show that the attitude towards failure can be a significant intangible asset, as long as it is properly capitalized. As we have mentioned earlier, most of those who went through a first failure leave the business world, if the failure is related to negative emotions (grief, sorrow). Metzger, 2007, considers that the probability of failure is higher for entrepreneurs who have closed a previous business through a failure. If it is associated with a state of optimism and appreciated as an opportunity - as an "instrument of learning" (Nielsen & Sarasvathy, 2011), failure increases the chances of starting future entrepreneurial actions.

According to the principles of behavioral economics, both failure and success can be understood as evolving processes. Entrepreneurial ecosystems are created and start to develop at the beginning of new start-up businesses. In Romania, over 10,000 small businesses, with an individual value of 42,000 euros, were financed in 2019, through a National Program. Until success is achieved, a chain of "intermediary processes" is running successively. We can look at the entry into the entrepreneurial ecosystem, by using two coordinates:

- evolution from trial (start) - i_k to success - S_t , where k - is the number of intermediary processes;
- the average life of the business in the ecosystem, which on average is 5 years; t - represents the number of years in which the business lives, survives in the ecosystem (between 3 and 5 years).

In the "intermediary processes" we will consider the following variables:

- E_k – failures recorded, $k = 1, 2 \dots n$, of different durations;
- R_k – reactions to the entrepreneur's state of failure;
- I_k – the learning process after each failure k ;
- X_k – the experience gained after each failure k ;
- O_k – the opportunities that come after each failure;

P_k – perseverance to resume business from the beginning (i_k – the initial state).

We can identify in the "intermediary processes" pairs such as (I_k, X_k) - learning from mistakes and acquiring experience. Learning processes can be modeled with dynamic Markov Chains, using specific mathematics. Closely related to reactions to failure (R_k), there are opportunities (O_k) to change the course of business, which must be identified. Thus, pairs (E_k, R_k) or (E_k, O_k) appear.

The accumulation of experience implies the assimilation of both theoretical and practical knowledge. Victor Hugo said that man is an ellipse with two centers: ideas and practices. The combination and accumulation of knowledge and experience is recorded in a leap such as: $X_{k+1} > X_k$, which derives from $I_{k+1} > I_k$. The courage and the risk-taking attitude make the entrepreneur persevere, starting from the beginning (i_k). In this view, we can represent the process of business evolution, even when dealing with unavoidable obstacles and circumstances, through the following graph:

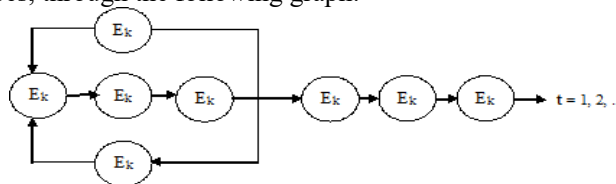


Fig. no. 1 Evolution of failures recorded so as to achieve success

Source: own research, 2020

Numerous research papers that have addressed over time the topic of business failure have focused on the factors that can decide:

- the result of an entrepreneurial action;
- the future direction of an entrepreneurial action;
- density of entrepreneurial actions.

From the analysis of the literature flow we can identify a succession of economic and noneconomic factors, presented in table 1:

Table no. 1 The series of factors that guide entrepreneurial action

The type of factor	The factor	Study
External macroeconomic factors	legislative system	Barkhatov et al., 2016
	bureaucratic system	
	corruption	
	fiscal policies	Atsan, 2016 Henrekson & Sanandaji, 2008
	interest rate	Gaskill et al., 1993
	economic timing	Lussier & Corman, 1996
	structure of the industry in which the organization operates	Gaskill et al., 1993 Metzger, 2007 Lussier & Corman, 1996
	labor market regulation	Landier, 2006
Internal economic and extra-economic factors	excessive indebtedness	Atsan, 2016,
	social capital	Atsan, 2016, Nielsen & Sarasvathy, 2011 Everett & Watson, 1998 Lussier & Corman, 1996

Internal economic and extra-economic factors	person demographics (gender, age, urban area)	Nielsen & Sarasvathy, 2011 Lussier & Corman, 1996
	entrepreneurial ability/intensity	Gaskill et al., 1993
	previous entrepreneurial experience/previous occupation	Nielsen & Sarasvathy, 2011 Eurostat
	educational background	Lussier & Corman, 1996
	start-up motivation	Eurostat
	management skills / management's ability	Everett & Watson, 1998 Gaskill et al., 1993 Lussier & Corman, 1996
	fear of failure	GEM, 2019
	capacity to perceive opportunities	Mitchell & Shepherd, 2011 Cacciotti & Hayton, 2019
	permanent connection to demand agents and to the competition	Mullins, 2010
	lack of financial resources	Atsan, 2016
	poor financial planning/excessive indebtedness	
	overconfidence	
	excessive risk taking/risk aversion	Atsan, 2016 Landier, 2006

Source: own research, 2020

Lussier & Corman (1996), Marom & Lussier (2014) appreciate in their studies that there is no unitary approach on the significant variables that lead entrepreneurial action to success or failure. Different opinions do not mutually exclude each other, but rather offer interpretations from other points of view on the circumstances that decide the entrepreneurial outcome. However, the fear of failure tends to impose itself as an important variable that determines the behavior and the entrepreneurial results, being found not only in the studies of the researchers, but also in the official statistics (Eurostat, Global Entrepreneurship Monitor), governmental reports, political exposures.

Fear of failure - incentive or obstacle to entrepreneurial action?

Entrepreneurial behavior, as part of human behavior, is influenced by the emotions, perceptions and cognitions of the individual becoming an entrepreneur. If the record of a failure cancels the entrepreneur's perception of previous achievements and he regains little or no courage for reentry in business, then he is dominated by the fear of failure. This fear can be defined as "generalized desire to avoid failure" (Mitchell & Shepherd, 2011, Elliot & Church, 1997). Sometimes, the fear of failure can have a positive effect, in the sense that it stimulates the entrepreneur to accept the risk, the challenge, the uncertainty.

But, for the most part, the processes of creating, recognizing, discovering and exploiting opportunities are diminished by the fear of failure. It accompanies the whole entrepreneurship process. Economically, it affects present /future entrepreneurial actions and can generate cascading effects. For example, fear of losing control over the customer portfolio entails the fear of not collecting receivables that generate the fear of losing control over cash flow, and then the fear of not being able to pay obligations to employees, suppliers, state budget (taxes and taxes), fear of not being able to continue the research and development activity. At the social level, it shapes the behavior of the entrepreneur, in the sense that it manifests as a fear of loss of home or family or fear of contradicting social

norms (Cacciotti & Hayton). Psychologically, the fear of failure is fueled by anxiety or expectations that are too high. It manifests itself as fear of depreciating one's own image, of losing confidence in one's own strengths, of disappointing others, of being exposed, of having an uncertain future. It is perhaps the hardest struggle, the one with the self.

Fear of failure can have varied, dichotomous effects on entrepreneurial actions and outcomes. Here are some of them:

- Fear of failure diminishes the density of entrepreneurial actions. It can accompany any other future entrepreneurial action of an individual, in the sense that it can generate the fear of exploring other opportunities.
- Fear of failure stimulates acceptance of risk and uncertainty. It is possible that entrepreneurs who are more afraid of failure to be more attracted to riskier opportunities. Thus, it produces "unique" effects, expressed by making strategic decisions (Mitchell & Shepherd, 2011).

Analysis of entrepreneurial actions according to the failure rate in a number of EU countries

The success or failure of the first or subsequent entrepreneurial action is, as we have explained above, influenced by the fear of failure, perceived differently, as a brake or stimulus, by different individuals. The purpose of this descriptive research is to establish a correlation between an input indicator - FFR (percentage of the population aged 18 - 64 years indicating that fear of failure would prevent starting a business) and two TEA output indicators (entrepreneurial activity total at an early stage, i.e. individuals involved in setting up a company + entrepreneurs of a company less than 3.5 years old) and HJCE (percentage of those involved in TEA who expect to create 6 or more jobs in 5 years). The statistical data used in this study are obtained from a secondary source - Global Entrepreneurship Monitor 2018/2019, by partially observing 20 states belonging to the EU, in 2015 and 2019.

Table no. 2 FFR and TEA in 20 EU states, between the years 2015 - 2019

Economy	2015			2019		
	FFR	TEA	HJCE	FFR	TEA	HJCE
Belgium	48,48	6,24	19,50			
Bulgaria	33,28	3,46	7,30			
Cyprus				36,40	12,70	22,01
Estonia	39,30	13,14	30,00			
Finland	32,62	6,59	18,20			
Germany	42,29	4,70	21,00	29,68	7,63	24,32
Greece	46,86	6,75	4,30	40,62	8,22	14,75
Hungary	41,82	7,92	31,40			
Italy	57,46	4,87	5,00	27,64	2,79	12,03
Ireland	40,87	9,33	33,00	31,39	12,41	40,88
Latvia	38,60	14,11	31,4	46,59	15,43	36,3
Netherlands	33,17	7,21	21,00	27,13	10,38	18,53
Poland	47,80	9,21		45,86	5,39	
Portugal	40,80	9,49	17,1	52,59	12,89	17,33
Romania	40,49	10,83	39,80			

Slovakia	33,65	9,64	28,50	43,71	13,33	26,22
Slovenia	32,39	5,91	20,50	42,23	7,80	19,94
Spain	39,15	5,70	8,70	48,21	6,15	8,98
Sweden	36,45	7,16	16,10	42,92	8,25	14,9

Source: data gathered from *The Global Entrepreneurship Monitor, 2018/2019*

Figure 2 shows the FFR and TEA for the countries included in the sample, in 2015 and 2019. We are looking for an inverse correlation between the exogenous variable FFR and the endogenous variable TEA. It is noted that, the point of max. FFR and one of the smallest TEAs in 2015 belong to Italy. Also, high levels of FFR corresponding to low levels of TEA belong to Belgium and Greece. In 2019, the minimum TEA belongs to Italy. Higher rates of FF corresponding to low TEA values are also observed in Poland, Spain, Slovenia, Sweden and Greece. An isolated situation is present in Portugal, TEA and FFR being at a maximum simultaneously, between the analyzed countries.

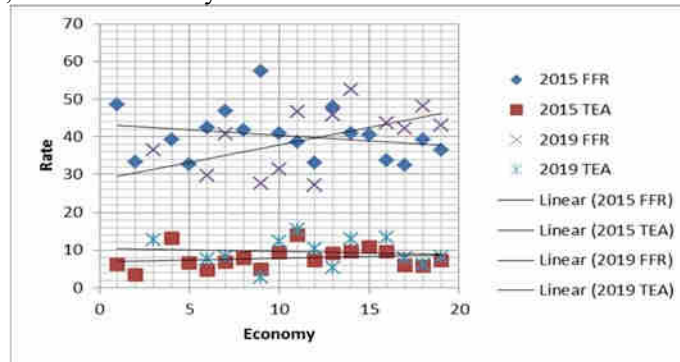


Fig. no. 2 FFR and TEA for 20 EU states in the years 2015 and 2019

Source: data gathered from *The Global Entrepreneurship Monitor, 2018/2019*

The specialized literature leads us to the following common idea: the success/failure of a company mainly means economic performance/absence of economic performance, measured at the macroeconomic level through indicators such as employment rate, survival rate of companies after 5 years, economic prosperity. Thus, Figure 3 reflects the correlation between HJCE and TEA. It is noted that for both 2015 and 2019, the HJCE rate is higher than TEA, for all the countries included in the sample. Ireland has the highest level of HJCE in 2019 and Romania in 2015.

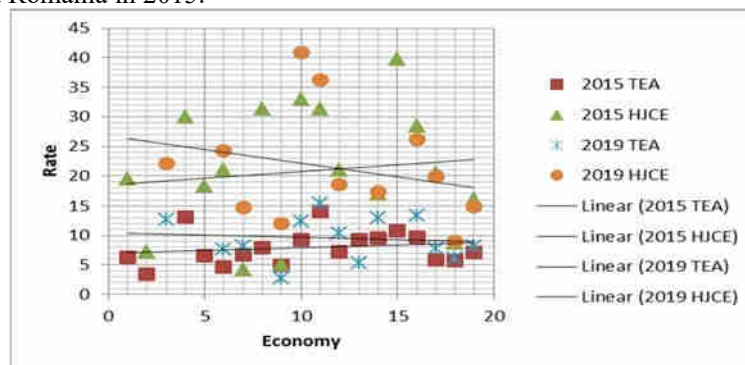


Fig. no. 3 TEA and HJCE for 20 EU states in the years 2015 and 2019

Source: data gathered from *The Global Entrepreneurship Monitor, 2018/2019*

Conclusions

It is generally accepted on a global level that entrepreneurship stimulates competitiveness and the inclination towards innovation creates new sustainable jobs, thus generating socio-economic well-being and determining the fundamental transformation of society and civilization. Therefore, when an entrepreneur fails, his reaction to failure is important, as well as his willingness to try again, taking into account mistakes and experiences assimilated along the way. This paper focuses on one hand on the centralization of factors that show the causal link between failure/success and the influencing factors, in accordance with the relevant literature, and on the other, it makes an analysis of how the fear of failure affects indicators expressing business success/failure in 20 of the EU Member States. We consider that a generalization of the study results could be achieved by a geographical increase of the analysis sample. This research can be extended in the following directions: (1) in the form of a qualitative analysis of the effects that the fear of failure has on entrepreneurial action and its results in Romania, in the context of the economic crisis generated by the COVID-19 pandemic; (2) in the form of a quantitative analysis through econometric models, starting from the hypothesis that several factors consecutively influence the result of entrepreneurial actions.

Acknowledgement

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SMALL AND MEDIUM ENTERPRISES INCENTIVES IN CORPORATE SOCIAL RESPONSIBILITY PRACTICES REGARDING EDUCATION IN THE NORTH-WESTERN REGION OF ROMANIA

Tomina Săveanu¹, Casiana Ille² and Daniel Bădulescu³

¹⁾²⁾³⁾ University of Oradea, Romania

E-mail: tsaveanu@uoradea.ro; E-mail: casiana.ille@gmail.com

E-mail: dbadulescu@uoradea.ro

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Abstract

In the last decades, the recognition of the role and importance of CSR (Corporate Social Responsibility) has been accompanied by the enrichment of the content and significance of the actors and domains involved. We refer in particular to the shift of interest towards small and medium-sized enterprises (SMEs) and, respectively, to the relationship between business, social responsibility and education. The expectations and needs of the parties involved are obvious and mutual. On the one hand, the involvement of the entire range of the business world can contribute to filling the identified gaps and vulnerabilities of education: financing, modernizing the curricula, understanding real economic needs. On the other hand, the education system can provide a better trained and innovative workforce, more efficient and socially responsible managers, and a society which is more open to the relationship with the business environment. In our study we focus on this particular issue: the educational programs organized by SMEs as domains of CSR activities. Our paper, using the results of a survey applied to 109 SMEs engaged in CSR activities in the North-Western region of Romania, aims to examine the extent to which the involvement in CSR of SMEs also comprises education. Even though the preliminary results indicate a rather low involvement in this domain, we consider that SMEs have great potential for improving education as social responsibility dimension, at least through strong collaboration with educational institutions.

Keywords

CSR, SME, managers, education

JEL Classification

M14, I25

Introduction

Within the context of increasing interest towards sustainable development, companies are investing more and more in society in their pursuit to align their economic goals to the societal progress. The issuance of the Corporate Social Responsibility (CSR) Reports and the growing interest in the academic field have drawn the business entities in the position where they need to explain how their activities influence the economy, the environment and the society at large. Companies are growing their involvement in the educational discourse and they already are key-players in addressing unmet needs in education.

In Romania, the field of CSR is still at early stages of development and this paper contributes to fill the gap and develop the literature through analyzing enterprises that are engaged in CSR activities in the North-Western region. The purpose is to explore the contribution of SMEs in this region regarding CSR activities related to education.

Conceptual Framework

The concept of corporate social responsibility is gaining momentum in today's economy and its role has increased especially in the context where business entities have accepted that their actions have an important impact on the environment they operate in.

CSR is still a developing area both in study and practice with a lot of confusion (McWilliams and Siegel, 2011; Garriga and Mele, 2004) despite, or maybe due to the considerable broad spectrum of approaches. The academic field has also increased the attention on the corporate social responsibility issue. This can be assessed by the impressive number of research articles published in the last decade in academic journals and magazines.

The concept of CSR can be traced back to ancient Roma (Chaffee, 2017), although the 1950 and 1960 are the early days of the modern era of social responsibility, continuing with the 1970's CSR when the approach was mainly based on a managerial perspective, focusing on safety and labor rights (Agudelo et al, 2019). In the 1980's the concepts of business ethics became part of the business vocabulary, making way for the operationalization on CSR (Cochran and Wood, 1984). Globalization of the CSR took place in the next decade, and the concept of "The Triple Bottom Line" was first mentioned by Elkington in 1998, considering for the first time the framework that puts into balance the companies' impact on society, environment and economy. Elkington (1998) explained that performance can be achieved through effective long-term partnerships between private-public sectors and also between all stakeholders. In the 2000's CSR receives recognition, expansion and implementation, building momentum for the strategic approach of the CSR provided by the academic publications and in the 2010's the emphasis was on the creation of shared value (Chandler, 2016; Agudelo et al., 2019).

We should also acknowledge the contribution of professional organizations (associations, firms, European Union) to the expansion of CSR in the economic world. More, the emphasis on strategic approach is also promoted by such structures that regulate the activities and propose standards for CSR and sustainability for firms: World Business Council for Sustainable Development (WBCSD), Global Reporting Initiative (GRI), standard ISO (2600), European Union Green Book of CSR.

Holme and Watts (2000) state that CSR is "the commitment of business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve their quality of life".

Although CSR has been traditionally associated with big corporations, the impact SMEs have on the economy, society and environment has drawn the attention of the academic world on the commitment of CSR activities in this sector.

CSR incentives in education

Enterprises are investing increasingly more in the endeavor to realign their economic pursuit to the progress of the society. The issuance of CSR Reports show that investments are increasing in the areas that impact society and environment more than before and sustainability is the main issue on their discourse. Welford and Frost (2006) point out that “any discussion about a strategy for education for sustainable development would be incomplete without the role of business”.

Enterprises are already becoming key-players in addressing unmet needs in education and thought leaders are shaping CSR programs that are purposefully supporting education across many contexts (Camilleri, 2016). Ozturk (2001) already emphasized the important role education has for society, explaining that no country can achieve sustainable economic development without substantial investment in the human capital. Creating and maintaining good partnerships with governments, trade unions and society it is in the businesses’ best interest (Camilleri, 2016) even though companies and governments rarely cooperate in a meaningful way when it comes to education and private companies often try to compensate the unmet needs. The opportunities that could come from this cooperation might have an important impact when referring to shared value creation.

Considering that economic growth can be founded on education and training (Radulescu et al., 2019) and that education is a pillar for all three areas that define sustainability, enterprises should concentrate efforts to create meaningful and value-enhancing CSR activities. CSR activities toward education have important ramifications in building sustained economic growth based on the solid foundation of increased productivity. A stable economic environment will provide the company a fertile ground for development and provide the important role of creating the economy not only by doing business, but by modeling it through the tool of education.

Romanian SMEs incentives in CSR activities relating to education

In the Romanian context, the CSR field is still at early stages of development and mostly concentrated in the sector of multinational corporations. The concept firstly emerged in the 1990’s. Large corporations have so far progressively developed a code of conduct for responsible behavior adopted from the parent-company and implemented locally.

In most of the cases CSR is still viewed as part of Marketing and PR and seen merely as philanthropy with emphasis on donations, sponsorships and public relations (Chersan, 2019). Obrad et al. (2011) analyzed Romanian companies in their socially responsible endeavors and the study confirmed that there are some issues in the way Romanian companies approach CSR activities, mainly related to transparency and the communication of CSR documents.

While the concept itself is not too well-known and adapted to Romanian SMEs, they usually display an educational orientation toward innovation and the efforts are consolidated by networking with external support for learning. SMEs may need to strengthen their collaboration with universities, as Apetrei (2015) pointed out, only few SMEs rely on universities and other educational institutions in building partnerships for education. Dornean and Rusu (2019) observe that Romanian SMEs appear to have numerous and well implemented CSR practices, although there is rarely a strategic approach or a clear concept and most common areas include incentives in children welfare, education, environment, art, sport and religion.

In Romanian enterprises, CSR activities are still at early stages and seen as philanthropies (Pop, 2016; Stancu and Olteanu, 2008;). Popa (2015) highlighted that CSR activities in Romanian companies focus mainly on areas relating to education, environment and community support. Studies on SMEs contribution to social responsibility and sustainability reveal that there is a growing interest in this regard, the main factor promoting it being the attitude of managers regarding the role of business in the society along with the size of

companies (Badulescu et al., 2019; Saveanu et al., 2019). Nonetheless, so far, we could not find researches focusing solely on the contribution of SMEs to education as a CSR domain of activity.

The Romanian context is similar to the European context where dramatic transformations took place. The economic, political and social changes provided the educational institutions with new unfamiliar challenges. In this context, the emphasis on CSR activities for education receive a new importance for building sustainable development. In the context where the education sector in Romania is underfinanced, companies need to provide a solution to fill the gaps.

Methodology

In this paper we present data collected through paper and online questionnaires in 2017. The instrument was aimed at reflecting the profile of CSR activities undertaken by small and medium enterprises in the western part of Romania. There were 18 closed questions and 4 opened questions. The questions ranged from characteristics of the firms, to understanding of the role of businesses in providing social welfare, CSR domains and activities undertook by respondent SMEs, level of formalization of CSR and organizational CSR.

There were 109 answers recorded with the help of MA students from University of Oradea, Faculty of Economics. The sample is opportunistic, as students collected the answers from firms with which they interact (work, family members or other connections). Consequently, we acknowledge that this sample is not representative; however, we consider that the results we present portrait a reality for SMEs in the region. There is one answer for each SME in the sample. Responses were given by managers or administrators of these firms.

In our sample of 109 SMEs, 54% are from Oradea, 7% from other towns in Bihor County. 22.7% are from other neighboring counties. The rest are from rural areas in Bihor County. The description of the sample can be found in the Table 1 below:

Table no. 1 Sample description

	Mean	Median	St. dev.	Minimum	Maximum
Number of employees	19,7	8	32,614	1	188
Turnover	6939196,38	521128,00	20578917,47	10	130589375,00
Year of funding	2005,75	2007	7,853	1991	2017

Source: authors' calculations based on dataset

In this paper we analyze questions regarding the:

- domains of activity (In the last five years, in which domains your firm undertook social responsibility actions? Check Yes/no from the given list: charity, community development, education, environmental protection, culture, sports),
- regarding social responsibility actions (Which of the following actions were undertaken by your firm? Check Yes/no from the given list: Donations or sponsorships, Involvement in social-community projects, Employee voluntary programs, Organizing social marketing campaigns, Promoting social causes, Organizing courses for other people than their own employees, Supplementary services for employees. This question was asked for two periods: In the previous year and in the last five years),
- regarding the money spent by firms on different type of activities (How much money did you spend on the following activities? Check amount intervals: less than 225 euro, between 225 – 2250 euro, between 2250 and 11200 euro and above 11200 euro, from each of the previous list of social responsibility activities).

The data was analyzed by the authors using SPSS statistical package. The tests conducted in the analyses presented in this paper are descriptive statistics (frequencies and statistical indicators).

Research results

In this paper we explore the contribution of SMEs in this region regarding CSR activities related to education. Asked in which domains our respondent firms undertaking CSR activities, we can notice the education was the third most engaging. Charity and environmental protection were domains in which almost half of the firms are engaged in. Education is a domain in which little over one third of our respondents were engaged in, showing great interest in it.

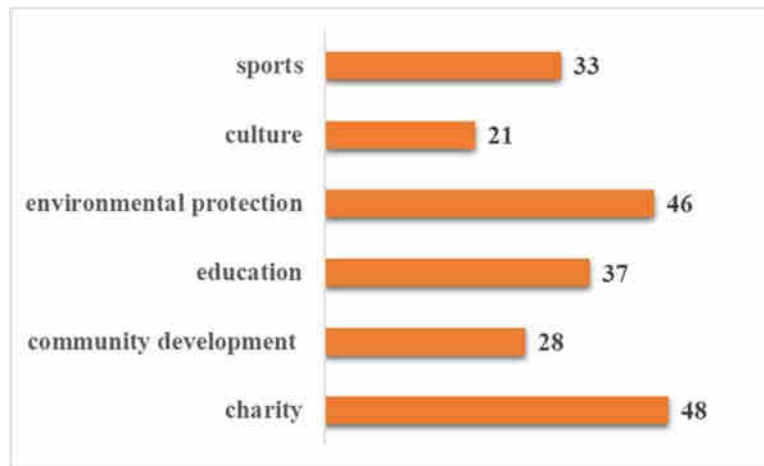


Fig. no. 1 In the last 5 years, in which of the following domains did your firm undertake social responsibility actions (number of answers for yes)

Source: authors' calculations based on dataset

Detailing these results, we asked our firms which are the social responsibility actions carried out in the last year or in the last five years. The detailed responses are presented in table no.2 below, showing a rather low interest in “organizing courses for other people than their own employees”.

Table no. 2 Which of the following actions were undertook by your firm? (Number of responses for yes)

Social responsibility activities	Yes, last 12 months	Yes, last 5 years
Donations or sponsorships	70	62
Involvement in social-community projects	31	27
Employee voluntary programs	24	23
Organizing social marketing campaigns	13	14
Promoting social causes	29	25
Organizing courses for other people than their own employees	26	19
Supplementary services for employees	60	53

Source: authors' calculations based on dataset

This shows that there is still a low awareness of this type of activities. Nevertheless, we must acknowledge that, given the higher involvement in education as presented above, it is possible that SMEs engage in nonformal educational approaches.

This result is stressed also by responses related to the amount of money invested in such activities – most of them declare they do not spend any money in them.

Table no. 3 How much money did you spend on the following activities?

Count	none	Less than 225 euro	225 and 2250 euro	2250 and 11200 euro	above 11200 euro
Donations and sponsorship	16	9	47	4	1
Involvement in community development projects	27	2	12	2	1
Employee voluntary programs	21	5	6	2	0
Social marketing campaign	21	5	10	0	0
Supporting a social cause	20	6	6	2	0
Training for other people then its own employees	18	4	9	0	1
Complementary programs for employees	24	7	22	6	3

Source: authors' calculations based on dataset

All the firms engaged in this domain of CSR activities are also involved in other domains. Consequently, also given the size of our sample, we could not investigate further the characteristics of firms that have CSR activities in education.

Our analyses show that the engagement in education as an area of social responsibility from small and medium enterprises is rather small. These firms are more inclined to charity and environmental protection, and as concrete actions they would rather make donations or sponsorship or provide other services for their own employees. This is probably the consequence of their lack of specific resources (personnel, finances) for CSR in general. While there is an interest in CSR involvement from SMEs in this region, due to this lack of resources these firms would rather limit their contribution on donating money for charity and providing some extra services for their own employees. Nonetheless we consider that SMEs have a great potential for improving education as social responsibility dimension, at least through strong collaboration with educational institutions. As SMEs are rooted in their communities, they are better able to formulate the concrete educational needs (along other specific needs) of the community and also provide some of the content through traineeships and other educational programs.

Conclusion

The last decades are witnesses of a general agreement, on a theoretical and practical level, on the growing importance of CSR for small and medium enterprises, and on the mutually beneficial relationship between business and education. Also, there is an increasing openness to understanding the fundamental elements and strategies of developing and integrating businesses, social responsibility and education. In the case of Romania, literature confirms, on one hand, a heightened awareness of the role of CSR among SMEs, and on the other hand, traditional measures, lacking the strategic vision that would encourage systematic and efficient educational involvement in education.

The present paper analyzes the importance of education among different domains of CSR activity undertaken by firms, the degree of involvement in such activities, using the results of a survey applied to 109 SMEs engaged in CSR activities in the North-Western region of Romania. Our outcomes reveal a rather small and quite obsolete engagement in education as an area of social responsibility from SMEs. However, given the region's SMEs' consistent and honest involvement in CSR, we consider the existence of a high growth and diversification potential of their involvement in education, including a better collaboration between the business environment and educational institutions. The main limit of the results presented in this paper are driven by the sample size and sampling method. The generality of our conclusion is limited. However, we consider that the data presented is relevant even for a smaller part of the companies. We intend to explore in more depth the involvement in this area of social responsibility by SMEs, and also extend the study to larger samples.

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ECONOMIC TRENDS AND ENTREPRENEURIAL ACTIVITY

Cristian G. Terza¹

¹⁾ "Alexandru Ioan Cuza" University of Iasi, Romania

E-mail: kcterza@gmail.com

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Abstract

Entrepreneurship is about discovering, evaluating and exploiting opportunities to create future goods and services, so special attention has to be paid to researching the concept of perception of opportunities. As a social force the entrepreneurial activity generates economic effects, but the real challenge is to find which factors are influencing the entrepreneurship and what drives the involvement of individuals in entrepreneurial activities. The data of 50 states, related to the entrepreneurial activity, were collected for the year 2019. The dependence between GDP and entrepreneurial activity was analyzed from a two-way perspective and Total early-stage Entrepreneurial Activity (TEA) was the dependent variable. Other two independent variables were established: Perceived opportunities (PO) and Perceived capabilities (PC), as percentage of the population aged 18 – 64, persons involved in any stage of the entrepreneurial activity or who consider that they have the skills and knowledge necessary to start a business.

We identified that there is a statistically significant direct relationship between TEA and PC, also a weak direct relationship between PO and PC. The estimated correlation ratio shows that the link between the dependent variable -TEA and the independent variables: PO, PC, GDP is strong. The values obtained from the econometric modeling, respectively from the multiple regression equation, validate the research hypothesis

Keywords

Entrepreneurial activity, perceived opportunities, perceived capabilities, Total Early-stage Entrepreneurial Activity (TEA).

JEL Classification

O12, O47, P17, P42

Introduction

From the very beginning, the existence of the human being was confronted with the need to satisfy his personal and family needs, for which he had to look for new resources. Initially these needs could be provided by the individual, but later the work specialized, and thus the

division of labor appeared. Individuals sought to obtain the necessary earnings to purchase goods and services that would ensure their existence. However, the progress of society and the economy as a whole has been characterized by change and competitiveness. The continuous development of the society has determined the revolution of the means of work, with the help of which it carries out existential activities. Basically, economies are characterized by large primary sectors, and as they develop, by secondary and, ultimately, tertiary sectors. The progress of economies and their transition to other stages of development determine the need for the formation of new industries and businesses. Thus, entrepreneurial initiative becomes almost imperative (Wennekers and Thurik, 1999).

Scientific research on entrepreneurship, from recent years, has brought new approaches. The large numbers of studies investigating the entrepreneurial phenomenon and the implications to related activities have brought new elements that prove the complexity of this field. Research has shown that entrepreneurial activities not only generate jobs and career opportunities, but also represent a means of economic growth through innovation (Drucker, 2014).

So, we can say that entrepreneurial activity is a social force that produces economic effects, that requires to be supported in the current context. The real challenge is to find answers to questions such as: 1) Which factors are influencing the entrepreneurship? or 2) What drives the involvement of individuals in entrepreneurial activities?

According to Arenius and Minniti (2005), entrepreneurship is based on discovering, evaluating and exploiting opportunities to create future goods and services. Special attention was paid to researching the concept of perception of opportunities. Self-confidence, risk-taking and skills in discovering opportunities have been significantly correlated, in many researches, with the creation of new businesses. Thus, when entrepreneurs made decisions, they relied significantly on subjective, even biased, perceptions rather than objective expectations (Shane and Venkataraman, 2000).

The perception of opportunities can be considered a determining factor in the development of entrepreneurship, and an inadequate level of entrepreneurial activity may reflect a lack of vision of community members, called "poor entrepreneurial thinking." Also, in addition to the perception of opportunities, many previous researches have taken as a key predictor the intention of a person to start a business, personal skills (Ebrahim and Schott, 2011; Noguera, Alvarez and Urbano, 2013; Walker, Jeger and Kopecki, 2013). Thus, self-confident people may have a low perception of threats and therefore may approach entrepreneurship with a reduced fear of failure which often increases business success (Krueger, 2007; Tsai, Chang and Peng, 2016).

We can consider that entrepreneurial activity or the processes of creation and development of a business result from the interaction between the individual's perception of an opportunity and the perception of the ability to act on that opportunity (Bosma et al., 2020). Certainly, perceptual variables are not the only determinants of entrepreneurial activity, so we seek to find out if the evolution of this field depends on the level of economic development, measured as GDP per capita. The dependence between GDP and entrepreneurial activity will be analyzed from a two-way perspective, the author aiming at the mutual influence between the two variables. Entrepreneurial activity uses the opportunity to create profit for the entrepreneur, at the same time it creates goods and services in the economy that generate direct income, and through employment it generates indirect income for the economy. Therefore, we can consider that the impact of entrepreneurship is spread on the whole economy.

Bjørnskov and Foss (2008) conducted a study on economic freedom and entrepreneurship in which they measured the influence of global economic development on the emergence of new firms in the economy. The results reached by the two researchers showed that

economic development (GDP per capita) is inversely associated with entrepreneurship. In other words, when the economy develops, there is a polarization of entrepreneurial activity towards the status quo.

The present paper aims to analyze the influence of the value of gross domestic product (per capita on purchasing power parity), the ability to perceive and exploit the entrepreneurial opportunities exercised on entrepreneurial activity. Regarding the “measurement of the degree of entrepreneurial activity” we will use the indicator Total early-stage Entrepreneurial Activity (TEA). Influencing factors can be grouped into perceptual variables (perception of opportunities and perception of capabilities) and factors aimed at economic development, in this case GDP per capita.

Methodology

From a methodological perspective, the research uses both qualitative and quantitative analysis. In order to identify the determinants of entrepreneurial activity, a review of the literature was conducted and, subsequently, data were collected in order to validate or refute the information found in the literature. In order to establish a link between the dependent variable and the three independent variables, multiple linear regressions were used. In the context of the evolution of society, we aim to identify the factors that influence the development of entrepreneurial activity. Starting from this premise, the data related to the entrepreneurial activity registered at the level of a sample of 50 states were collected. The data collected are provided by the Global Entrepreneurship Monitor (2020), the World Bank (2019, 2020).

The research hypothesis can be formulated as follows: entrepreneurial activity is influenced by the value of gross domestic product per capita at purchasing power parity, as well as by the ability to perceive and exploit entrepreneurial opportunities.

The dependent variable is Total early-stage Entrepreneurial Activity (TEA). This represents% of the total population aged between 18 and 64 who are either new entrepreneurs or managers and business owners.

The independent variables were established based on the literature. In such conditions, the following three were chosen: (1) Perceived opportunities: percentage of the population aged between 18 and 64 who report opportunities to open a business in the area where they live. (2) Perceived capabilities: percentage of the population aged between 18 and 64 persons, involved in any stage of the entrepreneurial activity, who consider that they have the skills and knowledge necessary to start a business. (3) GDP / capita PPP (USD): is the gross domestic product converted into international dollars, using purchasing power parity rates and divided by the total population.

The purpose of the article is to identify elements that justify entrepreneurial activity, starting from the influence of GDP and the existence of companies. In this regard, the following variables were used: Total early-stage Entrepreneurial Activity (TEA), Perceived opportunities, Nascent entrepreneurship rate, New business ownership rate and GDP / capita PPP (USD).

Statistics

Following the analysis of the data related to 2019, we can summarize the following:

- 12.82% of the population aged 18 - 64 are either new entrepreneurs or managers;
- 53.65% of the population aged 18 - 64 notice opportunities to open a business;
- 58.27% of the population aged 18 - 64, involved in any stage of entrepreneurial activity, consider that they have the skills and knowledge needed to start a business;
- the average value of GDP per capita at purchasing power parity is USD 37,928.76.

Table no. 1 Correlations between variables

		tea	Po	pc	Gdp
Pearson Correlation	Tea	1.000	.053	.561	-.190
	Po	.053	1.000	.472	.128
	Pc	.561	.472	1.000	-.351
	Gdp	-.190	.128	-.351	1.000
Sig. (1-tailed)	Tea	.	.358	.000	.093
	Po	.358	.	.000	.189
	Pc	.000	.000	.	.006
	Gdp	.093	.189	.006	.
N	Tea	50	50	50	50
	Po	50	50	50	50
	Pc	50	50	50	50
	Gdp	50	50	50	50

We identified that there is a statistically significant direct relationship between Total early-stage Entrepreneurial Activity (TEA) and Perceived Capabilities (PC). There is also a weak direct relationship between Perceived Opportunities (PO) and Perceived Capabilities (PC). And, between Perceived Capabilities (PC) and Gross Domestic Product per capita (GDP per capita) there is an inverse and weak relationship between Perceived Capabilities (PC) and Gross Domestic Product per capita (GDP per capita). All correlations are statistically significant, with a probability of 95%.

It is necessary to specify the fact that, following the data processing, Sig values higher than 0.05 were also returned, which underlines that they are statistically insignificant. Among them, we find: (1) The relationship between Total early-stage Entrepreneurial Activity (TEA) and Gross Domestic Product per capita (GDP per capita); (2) The relationship between Total early-stage Entrepreneurial Activity (TEA) and Perceived Opportunities; (3) The relationship between Perceived Opportunities and Gross Domestic Product per capita (GDP per capita).

Summarizing the above, with a probability of 95%, we admit that there is a statistically significant correlation between: Total early-stage Entrepreneurial Activity (TEA) and Perceived Capabilities (PC), Perceived Opportunities (PO) and Perceived Capabilities (PC), as well as between Perceived Capabilities (PC), and Gross Domestic Product per capita (GDP per capita). Thus, the results obtained are in accordance with those in the literature.

Table no. 2 Correlation ratio

Mode l	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Chang	df1	df2	Sig. F Change
1	.618 ^a	.382	.342	5.79096	.382	9.480	3	46	.000

Note: a. Predictors: (Constant), gdp, po, pc

The estimated correlation ratio is 0.618 which shows that the link between the dependent variable (TEA) and the independent variables (perceived opportunities, perceived capabilities and GDP per capita) is strong. The estimated value of the determination ratio is

$R^2 = 0.382$, which means that the variation of the dependent variable (TEA) is explained in proportion of 38.2% by the variation of the independent variables.

Table no. 3 ANOVA

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	953.693	3	317.898	9.480	.000 ^b
	Residual	1542.619	46	33.535		
	Total	2496.311	49			

Notes: a. Dependent Variable: TEA; b. Predictors: (Constant), pc, gdp_capita, po

Regression equation:

$$Y_x = -2.945 - 0.146PO + 0.385PC + 3.03GDP \quad (1)$$

The value $b_0 = -2,945$ represents the level of Total early-stage Entrepreneurial Activity (TEA), given that Perceived Opportunities, Perceived Capabilities and GDP per capita are constant.

The value $b_1 = -0.146$ shows how much, on average, the total early-stage Entrepreneurial Activity (TEA) decreases, to a 1% increase of Perceived Opportunities, if the rest of the independent variables remain constant.

The value $b_2 = 0.385$ shows how much, on average, the total early-stage Entrepreneurial Activity (TEA) increases, to a 1% increase of Perceived Capabilities, if the rest of the independent variables remain constant.

The value $b_3 = 0.385$ shows how much, on average, the total early-stage Entrepreneurial Activity (TEA) increases, at an increase of GDP / capita by one unit, if the other independent variables remain constant.

Conclusion

The scientific research of the last two decades approaches the entrepreneurial phenomenon starting from previously analyzed premises that included it in the sphere of the determinants of development. Distinctive valences have been discovered for the latter, involving, among others, the innovative process or the labor market. Therefore, the complexity of entrepreneurial activity is described by the vitalizing force placed on the process of human development, respectively on its determinants of economic or social origin. From such a perspective, our approach started from trying to identify possible answers to dilemmas that revolve around the factors influencing entrepreneurial activities and those that determine the decision to start such enterprises.

The specialized literature provided us with certain analytical milestones located in close correlation with the processuality of the activities of discovery, evaluation and exploitation of the entrepreneurial opportunities, respectively of the way of their individual perception. A complementary aspect of the perceptual variable on market opportunities (considered in previous research) refers to the subjective side involved in decisions to start a business, an element that emphasizes the individual perception of the existence of entrepreneurial capabilities. Regarding the measurement of the results of entrepreneurial activity, studies suggest the existence of interdependence between the macroeconomic indicator - GDP per

capita, and the entrepreneurial phenomenon, as evidenced by the direct impact of the latter on income generation, production of goods and services, the degree of employment, etc.

Therefore, our study focused on identifying the influence of the group of perceptual factors (opportunities and capabilities) as well as the one that describes, to a certain extent, the level of economic development (P.I.B. per capita). The two dimensions were juxtaposed with the G.E.M. (Global Entrepreneurship Monitor) Total early-stage Entrepreneurial Activity (TEA), as a dependent factor. The research hypothesis - entrepreneurial activity is influenced by the value of gross domestic product per capita at purchasing power parity, as well as the ability to perceive and exploit entrepreneurial opportunities, was statistically tested on a sample of 50 states whose data were collected in 2019 from the GEM database and that of the World Bank.

The descriptive synthesis of the analyzed indicators included information on the average percentage compared to the population aged 18 to 64, respectively: approximately 13% are engaged in entrepreneurial activities, 54% notice the existence of business opportunities, and 58% consider that have entrepreneurial skills and knowledge. It should also be noted that the average value of gross domestic product per capita at purchasing power parity was USD 37,928.76, which proves a relatively high level of economic development in the sample states.

Strong ($R = 0.618$) and statistically significant correlation ($\text{Sig} < 0.05$) between incipient entrepreneurial activity and the perception of business opportunities, together with the existence of entrepreneurial skills, as well as between the latter and the level of development expressed by the Domestic Product Gross per capita, it shows that subjective assessments of economic realities are what determine individual decisions regarding the start of entrepreneurial activities. In addition, only the perception of the existence of entrepreneurial skills and abilities will determine the final decision towards entrepreneurship, even if the opportunities are perceived on their positive side.

The values obtained from the econometric modeling, respectively from the multiple regression equation, validate the research hypothesis and may outline certain conclusions.

First, this model suggests that entrepreneurial activity is diminishing, *ceteris paribus*, to an increase in the perception of the existence of opportunities. This result is contrary to previous theoretical conclusions, according to which the existence of opportunities positively influences entrepreneurial activity (Kirzner, 1973). However, we consider the *ceteris paribus* clause to be the cause of this confusion. In reality, the way individuals perceive entrepreneurial opportunities can be severely dissociated from what they perceive to be their personal skills or abilities.

Second, the decision of the entrepreneurial debut can be taken starting not from the existence of the opportunity, but from the awareness of the existence of specific skills. Business opportunities can be identified later. This conclusion is validated in our model by the value of the coefficient b_2 . Entrepreneurial activity is positively influenced by the perception of individual skills. And this, we believe, is due to the fact that the process of self-knowledge is, in essence, of a psychological nature. The limitations of this approach do not allow a detailed analysis of the individual perceptual values of the selected sample.

Finally, the model proves, once again, that the dimensions of entrepreneurial activity contribute to understanding the process of economic development. It must be based on the recognition of the entrepreneurial phenomenon as one of the determinants of prosperity. Economic development is due to entrepreneurs, their attitude and talent.

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DRIVERS OF THE EVOLUTION OF THE CORPORATE SOCIAL RESPONSIBILITY: COUNTRY ASPECT

Elena Matveeva¹

¹⁾ Far Eastern Federal University, Russian Federation

E-mail: matveeva.ev@dvfu.ru

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Abstract

The study examines the influence of the country aspect on the development of the corporate social responsibility. Using the comparative analysis of the level of intensity of application of the principles of CSR in the field of entrepreneurship in Russian Federation and the United States of America, this study finds that the level of the sustainable development of economy is connected with the intensity of application of the principles of CSR in the economic field. Approaches to the study of CSR are classified; a comparative analysis of the theoretical approaches of Russian and American authors is carried out. The historical evolution of the development of corporate citizenship with the determination of the influence of economic factors on the formation of the institute of entrepreneurship is presented.

Keywords

Corporate social responsibility, corporate citizenship, entrepreneurship, sustainable development, economic factors, economy.

JEL Classification

A13, D64

Introduction

In 1953 American economist Bowen mentioned the term “corporate social responsibility of business” in his work “Social Responsibility of a Businessman,” which laid the foundation for modern research on CSR (Bowen, 1953). In his opinion, the social responsibility of a businessman consists of implementing that policy and making decisions that would be desirable from the standpoint of the goals and values of society.

The activity of modern business is characterized by an increased role of responsibility. The scale and size of organizations allows not only to respond and adapt to environmental challenges, but also to conduct proactive measures, creating their own environment. The creation of the environment takes place in various areas: the development of human capital

as a guarantee of a highly qualified workforce, social initiatives as ensuring the sustainable development of society, infrastructure projects as the construction of a direct working environment. The purpose of this article is to conduct a comparative analysis of two countries - the United States and Russian Federation - in a historical perspective to identify the level of intensity of application of the principles of CSR in the field of entrepreneurship. The problem stated in the paper is to indicate that in Russian Federation the principles of CSR are being introduced into activities by large companies that are ready to take on part of the responsibility of the state in matters of creating a social environment. However, the main difficulty for the effective use of this policy is the lack of a single concept. This situation arose in connection with the influence of historical turning points in the history of the country. The analysis showed the critical aspect of the paper, that the process of development of corporate social responsibility in the United States of America was gradual and progressive.

Methodology of research. The work is an analytical study that allows tracing the evolution of the concept in question. The problem-chronological method was used for a comparative analysis of the evolution of corporate social responsibility in relation to the USA and Russia. The method made it possible to establish similar features and differences between the phenomena and processes taking place at the same time in different countries.

Evolution of corporate social responsibility in the United States of America. The United States of America became the source of the formation of the institution of corporate social responsibility. The first stage of applying the principles of CSR can be determined in the period from 1900 to the 1920s. During the nineteenth century, organizations evolved from family farms to large industrial enterprises. As a result, the level of ethical standards has increased from informal family principles to formalized codes of ethics (Knouse, Hill & Hamilton, 2007). The church had great influence, as the first codes of conduct were based on biblical commandments. Such religious paternalism was based on a golden rule taken from the Bible: "Treat other people the way you would like to be treated" (Burton, 2007). A distinctive feature of the first attempts to create a human resources management body was the introduction of the post of social secretary. So, "H.J. Company" established this position in 1902, Colorado Fuel in 1901, and "International Harvester Company" in 1903 (Morf, Flesher, Hayek, Pane, Hayek, 2013). The second stage of business evolution began in the 1920s and lasted until the early 60s. At this time, business focused on the inherent right of every American citizen to have the opportunity to work and earn his living with his own labor. The turning point of the second stage was the collapse of the stock exchange, which happened on October 29, 1929 and entailed the beginning of the Great Depression. That difficult period became a catalyst in making employer's responsibility to employees a priority. An important role was played by the government that adopted acts and laws aimed at increasing the transparency of companies ("Social Security Act", "National Labor Relations Act", and "Fair Labor Standards Act"). The forties and the fifties of the twentieth century passed under the influence of the Second World War. Laws were developed and introduced to ensure the welfare of veterans. In 1947 the giant of the American market "General Electric" officially confirmed its position regarding the assumption of social responsibility. In the fifties there was a growth of corporations, accompanied by increased interaction between firms, workers, buyers and shareholders. Companies such as "Chryslers", "General Electric", "American Telephone and Telegraph" were not only leaders in production, but also pioneers in using the concept of corporate citizen. The sixties and the middle of the seventies became the flowering of charity and traditional philanthropy. During this period, the concept and definition of CSR is emerging (Pivovarov, 2007). In the nineties, companies conducted their activities with an aim to invest in the future, more and

more being introduced into the life of society and participating in its development. It was in the 90s that the concept of “stakeholder” expanded from the direct employees of the enterprise to consumers, trade unions, public organizations and society as a whole. The beginning of the 21st century was marked by tragic events: terrorist attacks in 2001, toughening the struggle in the world economy, the beginning of the economic crisis in 2008, as well as scandals associated with “Enron”, “Worldcom”, “Tyco” and “Martha Stewart”. At this time, the most difficult stage in the American economy began. Public trust in organizations was undermined, and there was a need to increase the transparency of their activities. Public demands led to the creation of the Global Reporting Initiative (GRI) in 1997. Then, on July 30, 2002, President Bush signed the Sarbanes-Oxley Act, which tightened the requirements for the financial reporting process.

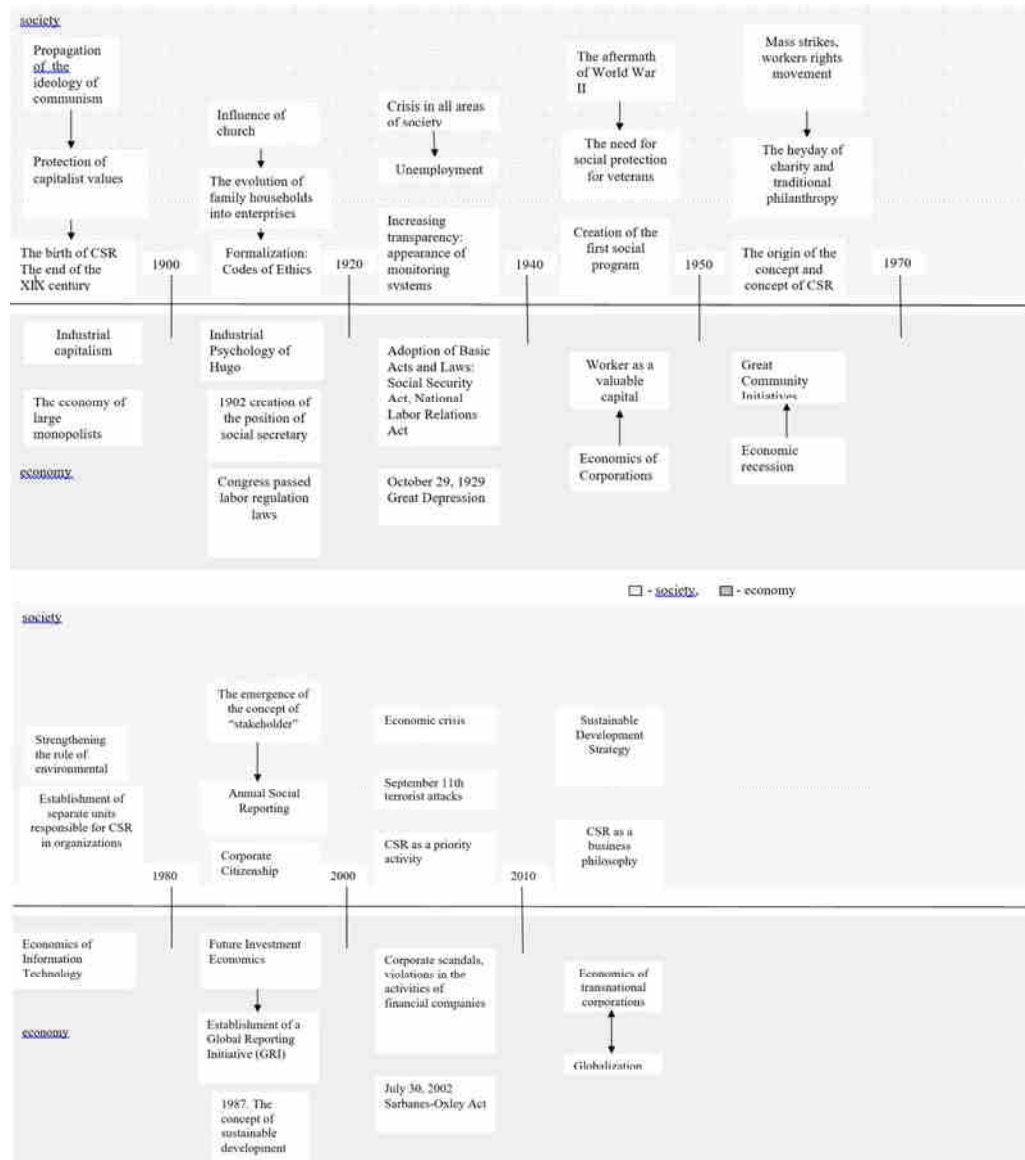


Fig. no. 1 The evolution of corporate social responsibility over time

These measures have helped corporations overcome the economic crisis. Setting the social reporting as a priority activity has helped many companies maintain image and reputation and identify a new competitive advantage. Since the early 2000s, organizations have continued to pay great attention to providing their employees with safe and comfortable working conditions. Moreover, one of the main activities of companies is to preserve the environment, support environmental programs. Today, American firms, depending on the size and scale of activity, are reinvesting their funds in creating the infrastructure of the district, city or territory in which their branches are located. The evolution of corporate social responsibility in the United States of America over time was intense, but balanced (fig. no.1).

In general, US companies are characterized by a steady increase in the number of reports on social activity and sustainability, a deep study of codes of ethics and the integration of companies in the life of society. Over the course of a century, the concept of social responsibility has acquired the status of a national and corporate policy, adherence to the principles and standards of which is one of the fundamental laws of the possibility of a company functioning.

Evolution of the corporate social responsibility in Russian Federation

Social responsibility in Russia is based on patronage, traditions, charity. Charity in the 19th - 20th century opened the only opportunity for entrepreneurs to receive ranks and titles. Honor, respect, and mercy are the words that form one comprehensive concept of "Russian soul". In this concept lies the image of CSR, characteristic of Russia.

The first stage of the development of CSR in Russian Federation includes two characteristics. First, it began with the attempts of individual entrepreneurs to implement individual social programs at enterprises, and then it developed into the patronage of large industrialists of that time. Speaking about the implementation of CSR in individual enterprises, we can note isolated cases of the introduction of social programs. Some Russian factories were the best in the world according to foreign experts, not only in terms of design, but also in terms of fulfilling social needs. In 1900 in Paris, a gold medal was awarded to N. Prokhorov for solving the social problems of workers at the Trekhgornaya manufactory (Delovaya Rossiya, 2004). However, at the national level, the attempts of the gains were not numerous. It was the absence of social legislation at the national level that led the workers to support the political program of the Bolsheviks.

Only in 1917 Russian entrepreneurs declared themselves as an organized socio-political force. The Society for the Economic Revival of Russia was founded by the millionaire A. Putilov. These attempts were in vain, since the Bolsheviks soon came to power, and after October 1917 they implemented the slogan on the destruction of private property and the bourgeoisie as a class. The consequences of those years left an imprint on the principles and philosophy of doing business that have survived even today.

The second stage of the development of CSR was formed during the years of the existence of the Union of Soviet Socialist Republics from 1922 until the beginning of perestroika in the 80s. In the USSR, the idea of an enterprise — a social guarantor with its own social infrastructure — was established. The volume and quality of social services provided to employees was directly dependent on the size of the enterprise and its place in the departmental hierarchy. The authoritarian regime implied an equation in the distribution of social goods, which caused stagnation in the development of CSR.

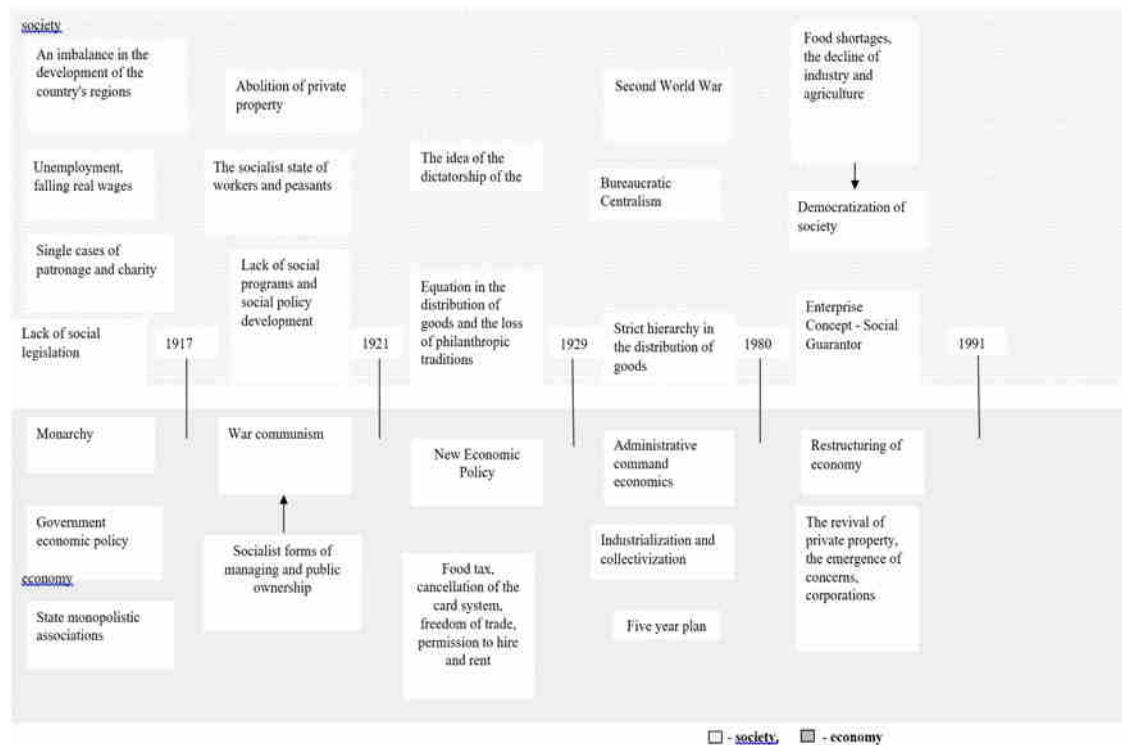
The third stage was the 80s, the time of perestroika, when the development of the ideology of the enterprise as a social guarantor continued. In the 1980s, 32 million Soviet citizens lived in apartments that were given them by the enterprises; 30 million used medical facilities owned by enterprises, 1.5 million children rested annually in children's recreation facilities owned by enterprises. The total cost of the "social benefits" provided by the

Russian enterprise averaged from 18 to 25% of the payroll (Chirikova, Lapina, Shilova&Shishkin 2005).

The fourth stage - the 90s - was another turning point. It is impossible to talk about the full-fledged evolution of CSR in Russia, since each stage is a collapse of the previous system and, consequently, a collapse of achievements in the social sphere. With the collapse of the USSR in 1991 and the beginning of market reforms, the social policies of enterprises underwent a radical revision.

Within the fourth stage, three periods can be distinguished: reduction of social infrastructure, its stabilization and optimization.

During the first period (early to mid-1990s), there was a sharp reduction in the social infrastructure of enterprises. The vast majority of enterprises were forced to cut any kind of expenses. As a result, two-thirds of the social facilities were transferred to the municipalities. With the end of the crisis and the improvement of the financial situation of enterprises, getting rid of the social sphere was no longer considered by their leaders as a condition for survival in a market economy. In the second period (1997–2000), the social infrastructure of enterprises stabilized. The approach to social objects has become different: enterprises began to take into account the benefits of their upkeep. As a result, the process of reducing spending on social infrastructure has stopped.



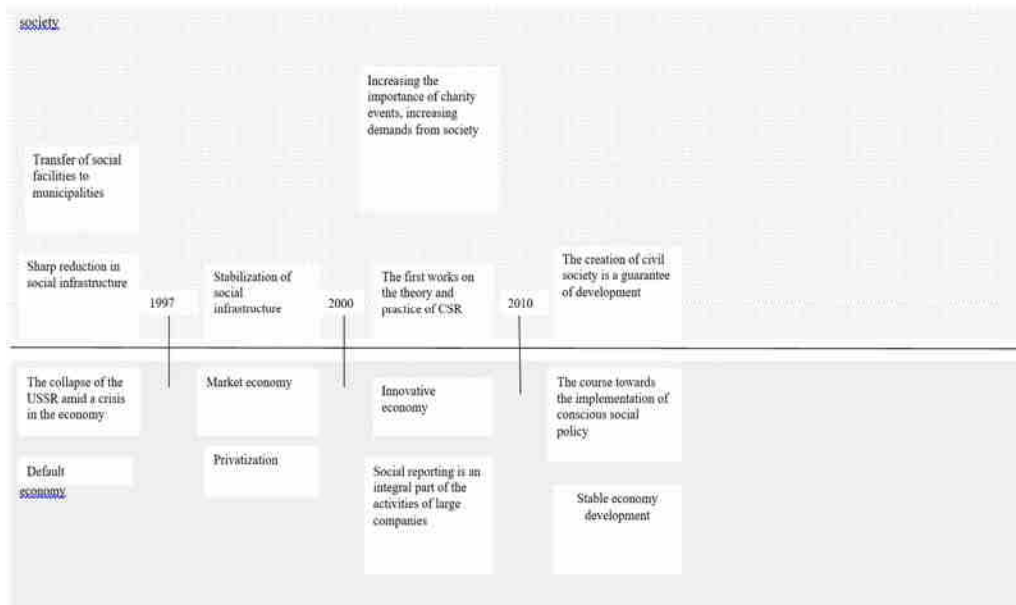


Fig. no. 2 The evolution of corporate social responsibility over time in Russia

With the beginning of the economic boom (2000s), the restructuring of the social infrastructure and the optimization of its core activities took place. The use of social objects was considered by enterprises as part of the implementation of a conscious social policy. Russian entrepreneurs explain the actualization of the problems of social responsibility by the country's entry into a new stage of social development and the strengthening of Russian capitalism. The development of CSR in Russia was unsystematic because of the influence of historical process (fig. no.2).

Conclusions

The main conclusion that presents the criterion of the scientific novelty of the article is the identification of a fundamental difference in the formation of the CSR institution in the USA and Russia. The study identified turning points that left the mark on the modern image of CSR in these countries. The originality of the study lies in the construction of timelines, which are models of the evolution of CSR in both Russia and the United States. While in the 20s of the last century, companies in the United States issued the first reports on CSR, laid down the basic principles and functions of this concept, a revolution was underway in Russian Federation, which entailed the destruction of a whole class of private owners. Further along the historical vector, it can be seen that the 90s for America is the heyday of CSR, the stage of transforming an individual concept into a powerful force, an independent sphere for business. In Russia, this is more likely not a period of reforms, but a real restructuring of the country. The 90s became a very difficult and tragic period when the whole country was forced to rebuild the economy, political system, and social sphere. The periods of the revolution of 1917 and the reforms of the 90s had such a strong influence on the development of the country that it was only at the cost of incredible efforts that it was possible to preserve the cultural and historical heritage of the country and build a new Russia on the basis of this in the new millennium.

In general, the results of the application of the methodology confirm that the prerequisites for the emergence of CSR in Russia were a harmonious continuation of the traditions and norms of public institutions and the business environment. The Russian type of corporate

social responsibility is based on cultural values and business experience of the pre-revolutionary era. At the same time, complex historical changes prevented the harmonious development of CSR in Russia.

The revealed differences in the evolution of CSR in Russia and the USA give the vector for the recommendations on the development of CSR in Russia. Firstly, on the example of the role of CSR in the USA, it can be concluded that the institution of CSR has repeatedly been a way to overcome crisis situations in the social and economic spheres. It can be argued that the creation of a strong CSR institution in Russia will avoid such moments in the future. Based on the results of the work, it is most advisable to create a single mechanism for introducing CSR in the work of companies and its assessment at the state level. The adoption of part of state obligations by socially responsible companies will not only improve the state of the economic sphere, but also form a conscious civil society.

An important contribution of this work to the increase in knowledge on corporate social responsibility is the specification of the current state and level of CSR development in Russia and the USA. Despite the complex process of implementing CSR principles in the field of entrepreneurship in Russia, domestic companies are actively engaged in increasing social responsibility. However, for the effective development of CSR policies, Russian entrepreneurship does not have enough coverage of its activities in the formation of the social sphere. Existing performance assessments and ratings in the field of CSR do not have a specific methodology. This is a critical limitation of the research. There is a lack of a single Russian standard in the field of CSR. Many companies operating along the path of social entrepreneurship do not provide information about this. These factors complicate both the development of corporate social responsibility and the assessment of this policy in Russian practice.

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ENTREPRENEURIAL EDUCATION, INFORMATION TECHNOLOGY AND COMMUNICATION, INNOVATION

Alina-Andreea Marin¹ and Andreea Chițimiea²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: alina.marin@man.ase.ro; E-mail: andreea_ch1995@yahoo.com

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Abstract:

This paper is based on Information and Communication Technology (ICT) as a true tool for entrepreneurship education. In a fast-changing world, basic education is essential for a person to access and apply information to start a business. Entrepreneurship is a valuable competence for EU citizens, in a knowledge society, based on knowledge, favoring personal and professional creation. Entrepreneurial education is essential for Europe's competitiveness and the continuous growth of an economic sale. In this study, over one thousand students from three technological high schools were observed, the behavior and the results obtained after studying the specialized economic modules were analyzed. Our goal was to identify the main challenges of these students. In our study we used both the quantitative method and the qualitative method. We applied questionnaires, topic interviews, direct and participatory observation as data collection tools. The results of this study show that the learning environment plays an important role in shaping entrepreneurial skills and in developing entrepreneurial skills in students.

Keywords:

entrepreneurial education, technology, innovation, knowledge

JEL Classification

L26, D83, P36

Introduction

Promoting entrepreneurship in education as a key competency encourages EU citizens to be enterprising, to find innovative solutions to societal problems and to create products that add socio-economic value, become creative and involved.

One of the main characteristics of the entrepreneur is the ability to combine existing resources creatively. The distinction between invention and innovation, all disrupting the economic changes of the innovations, is followed and the innovator is identified with the entrepreneur.

As the entrepreneur is the source of all economic change, capitalism can only be properly understood in terms of the conditions that give birth to entrepreneurship.

Information and communication technology (ICT) has become the main objective of the 21st century to be integrated socially, economically and culturally. The knowledge economy involves the integration of the flow of knowledge, information, people and services using the technology of knowledge and communication.

Education is a major sector that has undergone the influence of ICT innovations. Students must be able to access, integrate and evaluate information, develop their knowledge and communicate with others to be active citizens in an increasingly complex and rich world of information and knowledge.

ICT transforms not only the teaching process, but also the learning processes. ICT has led to a substantial increase in the preparation, planning and administration of lessons, but also an increase in the use of these technologies even in the teaching and learning process.

Information and communication technology makes all schools "smart". Students, teachers and administrators of education, as well as all the factors involved in education, have benefited and benefited from the integration of ICT in education.

At EU level, according to Flash Eurobarometer Reports, a survey was conducted on the role of entrepreneurship education, respondents were asked if they participated in a school or an entrepreneurial activity that would turn ideas into content or lead to a project (fig. nr. 1).

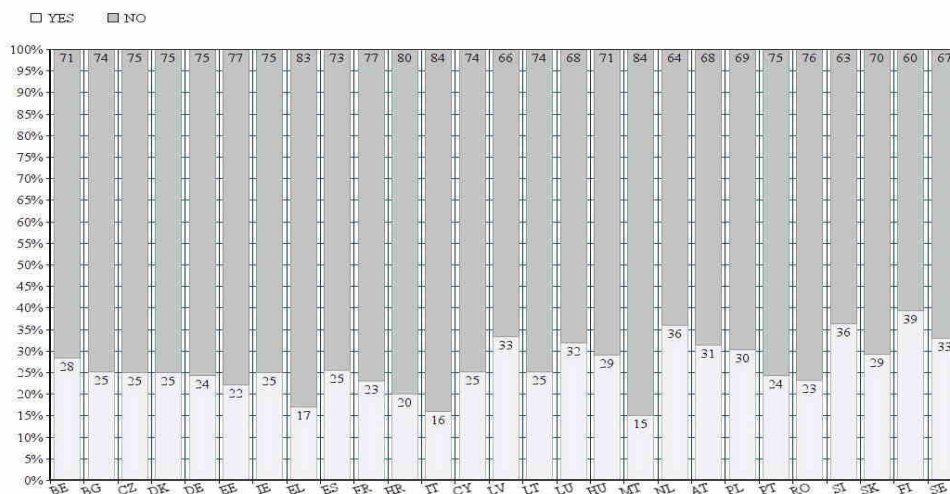


Fig. no. 1 Percentage of respondents who attended a course or entrepreneurial activity, 2012

Source: authors'

The European average shows that less than a quarter 23% answered yes, while quite a large percentage, 76% did not participate in any entrepreneurial courses or activities. The countries with the highest weight are: Finland-39%, Holland-36%, Slovenia-36%. We can see that Romania has a very small percentage 23%, which underlines the fact that students are not involved in such entrepreneurial activities.

Literature review

Economic and social development is increasingly based on the application of information technology in all fields. "ICT is an essential factor for productivity and economic growth, which must be used to accelerate global development, representing the essential infrastructure of the 21st century", emphasizes Waverman, Meschi and Fuss (2005).

The information society is the company in which the production and consumption of information is the most important type of activity. It is characterized by the democratization of information, communication, understanding and cooperation.

Several researchers have studied, analyzed and defined entrepreneurship. Entrepreneurship is any attempt to set up a new business or a new company, or to develop an existing business or company, by an individual, a group of individuals or a firm (Bosma et. Al., 2014, Benyovszki et al., 2011). Entrepreneurship is an activity oriented towards performance and achievements, individuals consuming effort for subsequent financial and non-financial rewards. Among the rewards in the second category we can mention the following: high level of autonomy, job satisfaction, well-being (Hopp and Stephan, 2012).

Education for Entrepreneurship can be seen as one of the contemporary themes of current school and out-of-school education and has also become one of the priority topics of the European Union's education policy. Entrepreneurial education has as its main objective the stimulation of entrepreneurship in the sense of business initiation and property rights or for the development of entrepreneurial skills.

Entrepreneurship is not only a way of creating jobs, increasing competitiveness and developing the economy, it also contributes to personal fulfillment and social goals.

"The digital economy refers to an economy based on digital technologies, although we increasingly perceive this by conducting business through Internet-based markets and the World Wide Web" (British Computer Society, 2014).

The spectrum of ICT use in schools can be classified into four categories: ICT competencies, teaching and learning, management and extension of school boundaries. These four categories are not mutually exclusive. Many of the schools had initiatives in several directions. Interdisciplinarity in the context of school education becomes a key concept, with the help of which an educational approach can be realized centered on the needs of the student, his possibilities and rhythms of learning, on the roles and approaches of the learner. The use of ICT in entrepreneurship lessons is extremely useful for stimulating creativity, critical thinking and analysis.

In this research 1200 students from three technological high schools were observed, from January to March 2020, the behavior and the results obtained after studying the specialized economic modules were analyzed. Our goal was to identify the main challenges of these students. In our study we used a mixed method: questionnaires, topic-based interviews, direct and participatory observation as data collection methods. We started from three hypotheses:

- The attitudes of students towards entrepreneurship do not change significantly after the completion of the compulsory course of Entrepreneurship Education;
- The intention of the students to become entrepreneurs is significantly changed after completing the specialized modules
- Students intention to become entrepreneurs is significantly altered as a result of the acquisition of digital skills.

The study was based on more detailed questions about the role of entrepreneurship lessons in school (fig. nr. 2). The answers to the following questions were analyzed:

- The education I receive in school helps me to develop my entrepreneurial spirit and entrepreneurial attitude.
- The education I receive in school helps me to better understand the role of the entrepreneur and increases the desire to further study this field.

- The education I receive in school offers me the skills and knowledge necessary to start a business.
- The education I receive in school convinced me to start a business.

Half of the respondents agreed that entrepreneurship education develops their initiative and in the same percentage agree that they understand the role of the entrepreneur better. Less than half manage to get the knowledge needed to open a business and less than a quarter want to start a business.

Based on the analysis of these questions it can be observed that: the greater the conviction of the subjects that entrepreneurship education can develop knowledge about the entrepreneurial environment, the greater their desire to continue professional training immediately after graduation, it may be precisely in the entrepreneurial field. On the other hand, the attractiveness of being an entrepreneur increases. The subjects do not come into contact with the practical aspects of entrepreneurship and this makes them reluctant and fearful when it comes to their own business.

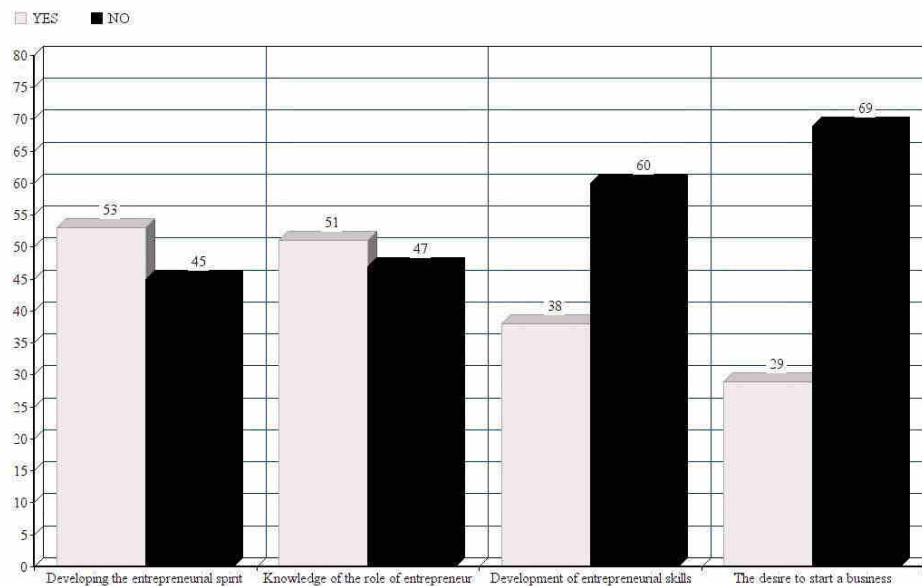


Fig. no. 2 Impact of courses and entrepreneurial activities, 2020

Source: authors

Increasing the belief of the subjects that specialized modules can develop knowledge and skills about the entrepreneurial environment has made the subjects in these groups become more and more eager to set up a business immediately after graduation. The greater the view of the subjects that the specialized modules can develop knowledge, skills and attitudes about the entrepreneurial environment, the greater the determination to do everything to be an entrepreneur and to make every effort to set up and run his own company. The study of the economic modules using the method of the execution companies supports the development of the entrepreneurial competences. The practical aspects encountered in the laboratory hours lead to the rapid development of the key entrepreneurial skills.

Results and discussion

Obviously, education will not solve all the problems that humanity faces today, but it is essential in the effort to connect the members of society, to generate new relationships, to respect the demands of the labor market and the needs of the environment.

Entrepreneur education teachers and specialized modules have the capacity of guiding future entrepreneurs not yet occupying a strong place in the academic environment. In a recent meta-analysis, Bae et al. (2014) show that entrepreneurial education, entailing training in the creation of start-ups, creativity and innovation workshops, as well as the students' entrepreneurial project mentored by the entrepreneurial faculty, increases the intention to start a new business among graduates, even if only a few ever create a company.

Teachers are in the midst of these changes and they have a strong impact on learner performance. They must have the right skills, knowledge and attitudes to provide students with the new education programs, pedagogies and learning environments they will need to acquire entrepreneurial skills. Teachers are those who play a central role. A school environment is needed where creativity and risk-taking are encouraged, and mistakes are appreciated as an opportunity for learning.

Individuals must continually improve their knowledge and skills in response to the rapid pace of changes that occur every day, otherwise there will be economic stagnation. Education institutions dealing with vocational training find it difficult, if not impossible, to correlate their ability to adapt education and curricular offer with the pace of changing labor market needs. In a global and dynamic world, it becomes more important for the skills taught in schools to be relevant to the workplace and to be maintained and improved throughout one's professional life. Building a solid foundation of competencies throughout the school years and providing lifelong learning is probably the viable solution to reduce the skills gap.

Entrepreneurial education helps individuals get better jobs, even if they are looking for a job and not for a self-employed activity. Using a multi-level regression, our results indicate a stronger need for entrepreneurial skills training in higher education institutions, on the one hand, and the introduction of policies that promote micro- and macro-level innovation in the countries' economies. other side.

Economic modules have become extremely important for several reasons. Learning through exercise companies about developing business plans and setting up a company allows students to better understand and integrate finance, economics, accounting, marketing and other business disciplines, providing them with an engaging and enriching educational experience. After all, entrepreneurship education creates links between the academic and business communities.

Students may not have the best business idea today. But this idea can come over 5,10,15 years. By that time, these students will already have a knowledge base about entrepreneurship that will allow them to set up what could be the next successful business. Thus investing in our high school students now, we are training the next generation of entrepreneurs for success. This step is very important. And it is much easier to build the foundation. Efforts supported by entrepreneurship education give students the opportunity to see that there is a chance for successful business if they have the necessary skills.

Moreover, entrepreneurship education lowers the risk of being unemployed and increases the chances of people finding it constantly better paid jobs.

As Alex Gray (2016) says : "Change will not wait for us: business leaders, educators and governments need to be proactive in improving people's qualifications and retraining so that everyone can benefit from the fourth industrial revolution" . Therefore, we have the obligation to create models and contexts to enable this, otherwise we will have a generation without competencies for the new demands of the labor market and which created great problems for society.

Conclusions

This study shows that the learning environment plays an important role in shaping entrepreneurial skills and developing entrepreneurial skills in students. Entrepreneurship in schools has, in many ways, been regarded as school development and different entrepreneurship projects have been conducted for the purpose of developing school activities. At present, it therefore seems highly uncertain whether the widened entrepreneurship perspective will contribute to teachers being able to decide on a clear purpose for entrepreneurship in school activities.

In conclusion, it is very important to follow the development of the main competences for the students who take entrepreneurial courses, namely: self-confidence, initiative, creativity, financial culture, resource management capacity, uncertainty and risk management capacity, teamwork, the ability to evaluate opportunities.

After controlling for pre-education entrepreneurial intentions, the relationship between entrepreneurial education and post-education entrepreneurial intentions was not significant. The results of our survey underline the assumptions that entrepreneurship programs have a positive impact on the development of key skills in the field of entrepreneurship. Students with entrepreneurial skills evaluate their personal entrepreneurial characteristics (sense of initiative, availability at risk, increase of personal esteem). It also develops its creativity, analysis, motivation, adaptability.

The motivation for change and the use of entrepreneurial approaches seems to be better in the fields of vocational schools based on intercultural programs such as Information Technology, Civic Education, Economy, Industry.

A future research should compare the effectiveness of the entrepreneurial education in high-schools of the same type as well as across high-schools of different types (e.g. vocational high-schools with economic/business profile versus vocational high-schools).

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TRENDS FOR SUSTAINABLE AGRIBUSINESS AND AGROFOOD CONSUMPTION IN ROMANIA

Ioana Panait¹ and Marian Cătălin Cucu²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: panaitioana48@gmail.com; E-mail: cmc.catalin02@gmail.com

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Abstract

The paper presents the trends from agriculture sector regarding food consumption and agribusiness, all the trends are linked to the sustainability of food and agriculture, the focus being on environment protection. The importance of the paper is reflected by the role of the agrofood sector in the development of the national economy, especially in the rural economy, where agriculture is the main economic activity and of the food, which is an important component in the life of the population, the consumption food trends influencing the lifestyle of the people. The objectives of the article include the presentation and description of current trends in agribusiness and food consumption for creating an image on the Romanian agrofood sector and analyzing the data of four specific food balance sheet indicators, for the main food categories of the last 4 years. Through the quantitative analysis, the paper highlights the trends in Romania compared to the European Union in terms of food consumption in order to determinate the consumption trends and production obtained, the imports made, and the food losses registered to determine trends in agribusiness. In the last period there is a slight increase in the quantities of food consumed by an inhabitant, a value directly proportional to that of the quantities of food waste, which raises question marks in the context of the population growth of the planet.

Keywords

Sustainable agriculture, environmental concerns, ethical consumption, agricultural economics

JEL Classification

Q01, Q13, Q17

Introduction

The expansion of food production and economic growth often have major negative effects on the natural environment, but can agriculture be transformed to provide enough output to cover domestic consumption, but also income opportunities for an economic viability to ensure sustainable development of agriculture sector? The purpose of the article is to highlight the

characteristics related to sustainability in Romanian agribusiness and consumer inclinations when purchasing and consuming agrofood products, describing the main ways to achieve sustainable development of the agriculture sector. The need to adapt to the new trends through a continuous development of the agrofood supply chain activities is essential for the agricultural sector to maintain in the best conditions and to improve in order to continue to offer products in line with consumption trends. The article aims to present an analysis of the trend of food consumption and business regarding the production and imports with agrofood products in Romania and the European Union (EU), as well as the influence of the main factors impacting this trend.

Food and Agriculture Organization (FAO) describes a trend that is part of the future of agriculture and food, "Changing food systems" and makes specifics about the current situation facing the agricultural sector and the changes that can improve the agricultural system. (FAO, 2017).

There are 3 situations that FAO mentioned which significantly impacts on agriculture and trends that farmers and consumers must focus on to contribute to the sustainable development of agriculture.

1. The present situation is "As the pressure on scarce land and water resources increases, the agrofood sector must find ways to reduce its environmental impact" (FAO, 2017) and the trends go to precision agriculture.

2. The present situation is "longer agrofood supply chains may be associated with higher greenhouse gas emissions" (FAO, 2017) and trends go to "from farm to plate" supply, slow food movement and local agrofood products.

3. The present situation is "the production of fertilizer, herbicide and pesticide, along with emissions from fossil fuels used in the field, represents about 2 percent of total greenhouse gas emissions" (FAO, 2017) and trends go to organic farming and zero residues products.

The aspects to be treated further in the article are the impact of sustainable consumer preferences on the current supply of agrofood products, starting from increasing consumption of organic products and purchasing local products through new supply-chain channels, and studying the differentiating elements through which agribusinesses can gain a competitive advantages and at the same time support the sustainable development of agriculture.

1. Actual trends in agriculture sector

The participants in the agrofood supply chain, from producer to distributor and final consumer are now more aware and more sensitive to global issues, especially regarding the natural environment, safety, and sustainability of the agriculture sector. Each actor tries to minimize the negative impact of the activities carried out on the environment and wants to work to contribute to the sustainability of the agricultural sector and for this to happen, it must adapt to new trends.

1.1 Trends in agribusiness

The present directions that contribute to a sustainable food system and which is emphasized more and more because they are friendly with the environment are in figure number 1.

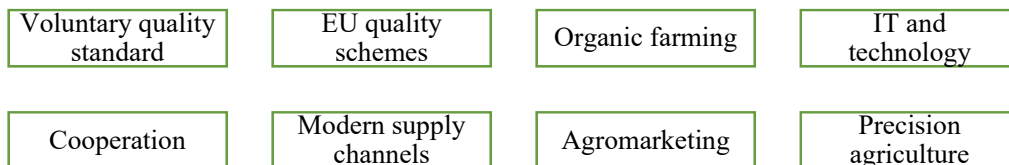


Fig. no. 1 Trends in agribusiness

Source: Authors research

Sustainable agriculture especially through **organic farming** is under development in Romania represented in 2018 only 2.4 % from the total agricultural area while the EU average is 7.5% (EUROSTAT, 2020) with 9,008 organic operators according Ministry of Agriculture and Rural Development from Romania (MARD, 2020) and the share market being representative in retail where imports are necessary to ensure demand that is growing.

One modern supply chain which is beginning to gain consumer confidence is the online shop, despite the high perishability of fresh produce customers are beginning to trust this mode of distribution. From farm to plate is a concept which encourage the short agrofood chains, directly from farmers to consumer especially since there is a direct connection with the farmer and thus the veracity of the product is ensured. In Romania, the main distribution channels are retail, which is a modern channel that covers the whole country, but the traditional free market is still maintained.

Cooperation in agriculture sector through development of agricultural producer organizations, inclusion in cooperatives, transmission of know-how through a partnership between farmers and agribusiness partners, creation of local action groups based on public-private strategic partnerships are necessary for effective integration into value chains of supply having the possibility of development at national level, ensuring a promotion of inclusive and sustainable economic growth, employment, finally ensuring a sustainable development of sector. Even if the trend at European Union (EU) level is cooperation between farmers and financial support is provided through the national rural development program, in Romania this action is still at the beginning. The big number of farms from Romania are explicated due to small dimension of it, is a tradition to maintain the family farm because this is an inheritance and for this reason the small farmers do not want to give up the land or to associate, they want to own and manage it for themselves. There is still the mentality of having only their own forms and only and to manage it themselves, the degree of association and cooperation are low in Romanian agriculture, with only 23 producer groups in fresh fruits and vegetables sector and 128 groups of producers in fields such as meat, eggs, milk, honey and cereals. (MARD, 2020)

Precision agriculture is based on a new agricultural system, a development based on increasing the yields of production under conditions of efficiency of inputs and natural resources with permanent and detailed control of the necessary conditions of cultivation and innovation based on IT technologies for the continuous monitoring of all indices and their permanent control by accessing information from portable mobile devices. The precision agriculture aims to a sustainable production which built resilience to climate change. In Romania, precision agriculture is mainly carried out through hydroponic greenhouses that offer controlled conditions for the growth of the vegetable culture, being monitored and ensured optimal conditions for all the stages which will bring to producers a higher yield of the production compared to the open field vegetable production.

In the context of demand diversification to consumers for sustainable products, as well as from the increased interest in locally produced foods, **agromarketing** represented by regional branding can contribute to the creation of an identity of the products that attract the consumers and to represent a competitive advantage on the market. In Romania, the most famous brands are those that have a history behind, being founded for decades.

The traceability through blockchain technology allows the recording of all the steps performed within the agrofood supply chain, highlighting the origin of the food products, allowing the consumer to know all the activities that were the basis of the product and creating a transparent agri-food market. Through the QR code from label, the producer brings added value to the product and the consumer having access to different real information about the consumed product will have more confidence in it.

To provide a guarantee that the food safety of agricultural products is ensured, the farmers can obtain a **voluntary quality standard** that certifies their production and strengthens their

credibility with consumers. Through these certifications, which are now common in the market of agri-food products, it is claimed that the production is obtained under favorable conditions, respecting the environment, providing all the necessary conditions for the employees according to the social audit and respecting the welfare of animals. (FAO, 2020) The **EU through quality schemes** aims to add added value to products with unique features, in present there are 4 certifications for these products. In Romania there are only 7 food products with EU quality labels these being registered between 2011-2019 when more information was available on these certifications after Romania's accession to the EU in 2007 and when the potential of these products was realized for the local economy being generative of the added value for the producer, but also for the society, while countries such as Spain, France, Italy, Greece, United Kingdom, Luxembourg, Portugal, Belgium, Holland, Denmark, Germany, Austria have registered their first products since 1996. (EU, 2020) MARD certifies the agrofood products through two national certifications, Romanian traditional products, and Romanian consecrated recipes, with 33 recipes which includes a range of meat, bakery, milk products and processed fruit and vegetables.

The agrofood value chain need to be more interconnected and during all the stages it is necessary to take into account the sustainability and the reduction of some elements that currently negatively influence the development of the Romanian agricultural sector: food waste, carbon dioxide emissions. The development of the agricultural sector can be achieved through research, development and knowledge transfer that will develop innovations to address the threats to the profitability and competitiveness of the agricultural sector leading to efficient agrofood supply chains and sustainable agricultural practices.

1.2 Trends in food consumption

Food consumption patterns reflect complex social behaviors that can characterize a society and different models at country level are due to the differences between the individual purchasing power, food preferences, cultural aspects, access to food and all this tend to improve with the level of economic development.

Consumers have become increasingly distant from the physical and social origin of food because of industrialized food systems that support quantity over taste, quality, sustainability, and environmental protection so consumers try new trends and look for new alternatives that combine the main characteristics of an authentic and sustainable agrofood supply chain (Blay-Palmer, 2008).

In most countries the consumption of processed foods has increased more than the consumption of fresh foods, according to Global Dietary Database the middle-income countries show the biggest change to the consumption of processed foods and in urban areas there are preferred foods that ready to cook and eat.

In figure number 2 there are presented the main trends in food consumption being characterized below.



Fig. no. 2 Trends in food consumption

Source: Authors research

The rise of **ethical consumerism** has increased consumer support for products from sustainable production systems, ethical consumers have a concern that it includes not only the well-being of own and that of society, but also of the environment. Reconnecting the food chain and switching to sustainable foods it is a long-term path to progress and constant improvement must be strength driving sustainable agriculture.

Slow food is a global trend that wants to prevent the disappearance of local food that is based on tradition and aims to rediscover the food which is good and clean, but also to know and value the producer, creating a deep connection between producer-culture-traditions-product-consumer. (Slow Food International, 2020) There are several restaurants in Romania that are based only on this trend and that gather people not only for food, but also for conversations and events related to this concept.

Local food production with specifically agrofood products from a region linked to tradition is important especially because the consumption supports the community from a socio-economic point of view. Also, the consumption of local products to the detriment of the imported ones helps the environment because the carbon dioxide emissions emitted by a local product following the transport are lower compared to an imported product from a long distance.

Currently, consumers of **organic agrofood products** in Romania want products that meet their needs and expectations, with a strong emphasis on quality and safety, at a not very high price. Most importantly, consumers' awareness of the benefits and high demand of consumers, especially in developing countries such as Romania, are the most essential for the development of organic farming and the tendency so far has been that the demand will increase exceed the availability of national production which are certified as organic farming. Food consumption trends that influence consumers' choices and preferences are based on consumer education and concerns towards social issues, especially those that support the local rural economy and towards environmental issues for the purpose of greening agriculture.

2. Quantitative analysis on food trends

For this quantitative analysis were centralized the main data regarding the food consumption of the main 7 categories of foods that indicate the consumption trends of the population in Romania and in the EU in the period 2014-2017.

In table no. 1 are presented the main sources of supply for the 3 categories of foods analyzed through which it can be highlighted the national production trends, the international trade for these products, but also the preferences about food consumption.

Table 1. Food Balance Sheet for cereal and fruits and vegetables products. Romania vs EU average

Category	Year	Food supply quantity kg/capita/yr		Domestic supply quantity 1000 to		Import quantity 1000 to		Losses quantity 1000 to	
		EU	RO	EU	RO	EU	RO	EU	RO
Cereals - Excluding Beer	2014	127.9	158.0	291,952	13,577	96,688	1,812	6,762	104
	2015	128.2	163	281,359	12,349	98,607	2,493	6,248	88
	2016	128	165	280,574	13,807	102,880	3,824	6,431	90
	2017	127.5	168.5	285,960	13,313	110,825	2,926	6,540	104
Fruits - Excluding Wine	2014	82.3	82.81	71,516	2,639	45,196	644	3,764	61
	2015	88.2	84.55	75,594	2,653	46,184	791	3,817	59
	2016	86.1	90	73,940	2,707	45,903	943	3,821	61
	2017	84.2	88.25	69,931	2,839	47,921	965	3,835	69
Vegetables	2014	106.4	190.78	63,194	4,195	25,998	450	6,911	191
	2015	105.3	188.56	62,892	4,121	26,905	514	7,147	197
	2016	110.7	178.93	65,414	3,876	27,717	597	7,119	182
	2017	111.3	196.22	65,550	4,227	28,306	605	7,152	203

Source: FAO STAT,2020

The consumption of vegetables registered in the EU an increase of 4.67 percentage points in 2017 compared to 2014. In Romania, the consumption of vegetables decreased during 2014-2016, in 2017 increasing by 5.44 kg/capita/ year compared to the year 2014 and with 17.29 kg/capita/year compared to 2016. The main factor influencing this trend is the domestic production, an indicator that is directly proportional to the consumption of vegetables per capita/year. At EU level, in 2017, vegetable production increased by 3.73 percentage points, compared to 2014, while in Romania the growth was only 0.76 percentage points. The import of vegetables is an indicator that is constantly rising, both in Romania and at European Union level, in Romania it registered an increase of 34.44 percentage points, in 2017 compared to 2014, while at EU level of 8.88 percentage points. With the increase of the consumption of vegetables the losses related to this category also increased, in 2017 compared to 2014 in Romania the losses increased by 12,000 tons, while at the level of the European Union the losses increased by 241,000 tons.

Carrying out an analysis on fruit consumption, between 2014-2017, we can see a slight increase in the quantity consumed per inhabitant, if in 2014, at EU level, 82.38 kg/inhabitant were consumed and in Romania 82.81 kg / inhabitant, in 2017 The EU registered an increase of 2.23%, and Romania 6.57%. This detachment of Romania from the EU is also because the domestic fruit production in Romania registered an increase of 7.58%, while at EU level it decreased by 2.22%. Besides the growing domestic fruit production, there is also a significant increase in imports, in Romania, during 2014-2017 fruit imports increased annually, reaching in 2017 a value of 49.84% higher compared to the year 2014. With the increase of domestic production and imports, the losses on the fruit segment registered significant increases in Romania, if in 2017 there were 69,000 tons of fruit loss, in 2014 the value of this indicator was 13.11% lower.

Analyzing the consumption of cereals, in the period 2014-2017 Romania registers values higher than the European Union average, registering a constant increase of this indicator, while the EU average registers a small decrease of 0.34% in the year 2017 compared to 2014. Both in Romania and in the EU domestic production of cereals registered lower values in 2017 compared to the base year, Romania registered a decrease of 1.94% while the EU recorded a decrease of domestic production by 2.05%. Regarding the import of products that belong to this segment, reporting 2017 to 2014 there is an increase of 14.62% at EU level and an increase of 61.48% in Romania.

Table no. 2 presents the 4 indicators studied for the 4 categories of animal products. Regarding dairy products, if at EU level there was an increase of 0.78%, in Romania the consumption fluctuated, in 2017 decreasing by 1.79% compared to 2014. Although in Romania, in 2017 it was consumed a smaller quantity of dairy products compared to 2014, during the four years analyzed, the consumption in Romania was above the European Union average. While at EU level the domestic production of dairy products increased every year reaching in 2017 an increase of 1.96% compared to 2014, in Romania the domestic production of dairy products is decreasing, decreasing by 4.9% in 2017 reported at the base year. As compared to the base year 2014, in 2017 imports increased by 12.22% at EU level and by 53.67% in Romania. With the decrease of domestic production and the increase of imports of dairy products in Romania, the share of losses decreased significantly, by 10.71% in 2017 compared to 2014.

Meat consumption per inhabitant in Romania has registered values below the EU average. However, reporting 2017 to 2014, Romania had an increase of 6.36 percentage points, while the EU average of 2.55 percentage points. However, the growth coefficient in Romania of meat production is approximately equal to that of the European Union, reporting 2017 to 2014, Romania increasing 3.94% and EU 3.89%. Regarding the import of meat in Romania, it is in a continuous increase, if in 2014 Romania imported 377,000 tons of meat, in 2017 it registered an increase of 33.69%. Analyzing the losses, at EU level, in 2014-2017 Romania

registered a constant growth, reaching in 2017 to register a value with 16.23% higher compared to 2014.

Table 2. Food Balance Sheet for animal products. Romania vs EU average

Category	Year	Food supply quantity kg/capita/yr		Domestic supply quantity 1000 to		Import quantity 1000 to		Losses quantity 1000 to	
		EU	RO	EU	RO	EU	RO	EU	RO
Eggs	2014	11.09	14.33	6,819	337	1,415	16	132	16
	2015	11.06	14.10	6,876	329	1,411	20	133	16
	2016	11.31	13.59	7,006	320	1,423	21	135	15
	2017	11.45	14.35	6,956	327	1,533	20	138	16
Fish, Seafood	2014	23.06	5.85	13,458	133	18,623	124		
	2015	23.01	5.88	13,360	133	18,232	124		
	2016	23.14	5.92	13,546	133	18,425	124		
	2017	23.11	5.96	13,592	133	18,300	124		
Meat	2014	80.52	60.09	41,204	1,217	15,721	377	345	12
	2015	81.51	63.49	41,756	1,278	16,101	439	368	13
	2016	82	65.86	42,508	1,316	16,383	464	394	14
	2017	82.57	63.91	42,807	1,265	17,088	504	401	12
Milk - Excluding Butter	2014	234.71	243.28	143,509	5,126	52,172	518	873	28
	2015	234.79	244.62	143,564	5,061	54,786	549	896	27
	2016	235.51	247.09	144,339	5,083	56,556	679	900	27
	2017	236.55	238.92	146,322	4,875	58,546	796	910	25

Source: FAO STAT, 2020

Following the analysis of the consumption of fish and seafood both at the level of Romania and at EU level, insignificant increases are found, in 2017 compared to 2014, Romania registered an increase of only 1.88% while the EU of 0.22%. As a result of the quantities consumed by fish and seafood unchanged both in the European Union and in Romania the domestic production and the import of the products of this category have registered insignificant changes.

Reporting the consumption of eggs from 2017 to the value registered in 2014, we find an increase at EU level of 3.25% while in Romania of only 0.14%. Regarding the domestic production, although in the EU there is a slight increase of 2.01%, in Romania there is a decrease of the production with 2.97%. Due to the low growth rate of domestic production at the European Union level, as well as the decrease of the Romanian production, imports gained ground registering significant increases of 8.34% in the EU and 25% in Romania.

Referring to the domestic production of the main categories of food products, there is a slight increase among fruits, vegetables and meat, which can indicate the development of Romanian agribusiness in these areas, both by increasing the surface area, livestock and by increasing yields.

Regarding the situation of imports, there is a significant increase among the main categories of food, which reflects an upward trend of the development of import-based businesses (distribution) and at the same time it reflects the huge potential of the production and processing based businesses in Romania, due to the demand not covered by the current domestic production.

Conclusions

The current trends in agribusiness offer farmers the opportunity to have a competitive advantage in the market through products that offer added value to the supply chain and the food consumption trends presented indicate a demand for products that not only satisfy the need for food but also support local producers and have a minimal impact on the environment. Regarding the consumption of food products of the main categories, in Romania, there has been a steady increase only among cereals and products derived from cereals (in Romania consumes in 2017 with 40.97 kg / inhabitant more than the EU average) and fish (Romania, although it has an exit to the sea and is crossed by one of the largest rivers in Europe, has a consumption of over 25.79% lower compared to the EU average, in 2017). Among the products derived from fruits, meat and milk, Romania registered constant increases in the period 2014 - 2016, in 2017 the quantities consumed on average by one inhabitant decreased, however the quantity consumed related to these categories of products during the analysis period had values higher than the EU average.

The limitations of the research consist in the impossibility of determining the efficiency of the implementation of the current trends analyzed from the point of view of sustainability, following in future research to demonstrate the correlation between identified trends and their long term impact considering the socio-economic and environmental aspects. The role of agriculture is strengthened, with a focus on the need for future growth of agricultural production in line with food safety and security issues, which must be in line with long-term needs in terms of sustainable development on the three pillars, socio-economic and environmental with benefits on the whole society while protecting the planet.

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IMPLEMENTING NET PROMOTER SCORE IN THE PUBLIC SECTOR ORGANIZATIONS

Oana Alexandra Vochin¹, Maria-Alexandra Sârbu², Silviu Stanciu³ and Jiries Mansour⁴

^{1) 2) 4)} *The Bucharest University of Economic Studies, Romania*

³⁾ *"Dunărea de Jos" University of Galați, Romania*

E-mail: oana.vochin@gmail.com; E-mail: alexandramariasarbu@gmail.com;

E-mail: sstanciu@ugal.ro; E-mail: jiries.mansour@gmail.com.

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Abstract

This article presents the advantages of implementing the Net Promoter Score (NPS) tool in the public sector. The main scope of this research was to analyze the consequences of implementing NPS in the public sector and to fill a gap in research where the NPS measurement tool is very popular in the field of private organizations but almost unknown in the public sector. Furthermore, only several previous researches on this topic were found. The theoretical framework of the article is based on a comparison between the reputation of NPS tool in the private and public sector. The analysis of the NPS efficiency in the private organizations is based on statistical methods; therefore, this is considered a quantitative research. The qualitative research includes the literature review about the Net Promoter Score methodology and the public sector characteristics and needs of a satisfaction metric.

The research works as a parallel between the advantages of implementing the NPS tool in the private organizations and the benefit gained by implementing the same satisfaction measurement tool in the public sector. The research proves that the public sector has the necessity of implementing its own tool for measuring satisfaction and reputation and confirms that NPS is the right tool, which fulfills this need. The most important result of this research consists in evidencing the advantages of implementing such a metric tool in the public sector.

Keywords

Net Promoter Score (NPS), satisfaction measuring, public sector organizations, organizational growth, customer satisfaction, employee satisfaction

JEL Classification

H0, M1, M5, M10

Introduction

Measuring the performance of the public sector organizations is a new and challenging topic that creates discussions especially in the political environment. The satisfaction level of the customers from the public sector should become a major topic for the states. The difference between the public and private sector is major, as public sector organizations do not focus only on customer satisfaction and efficiency, but also on democratic values and services (Gelders, Bouckaer & Van Ruler, 2007). Thus, this research aims to demonstrate that implementing the Net Promoter Score tool within the public sector would add value to the service level and would increase significantly the customer satisfaction.

According to Reichheld (2003), NPS tends to be “the one number you need to know to grow” in order to have a successful business. In this respect, this research aims to analyze if NPS implementation in public sector is the key to growth. An important aspect, which should be considered, is that the customers have a little choice when it comes to choosing the service provider. For this reason, it is challenging to implement an NPS tool within the public sector, as the context is different. However, this study contemplates on the advantages and benefit of implementing such a satisfaction metric in the public sector organizations.

While in the private sector, employees, customers, partners, suppliers, contractors, owners, represent the stakeholder’s associates or any other people related or located nearby, in the public sector the main stakeholders are voters, taxpayers and any other customers who use the private sector services (Luoma-aho, 2007). Based on Canel & Luoma-aho (2018) focusing on citizen satisfaction is not enough in order to improve the satisfaction level of the public sector customers. For this reason, there is a need of a tool, which simultaneously identifies the causes, which contribute to the satisfaction, or dissatisfaction of the citizens. Based on those results the utilization of the public sector resources and the strategy would improve the service quality, reduce the costs and promote investments. In this respect, communication plays a very important role when it comes to measuring the customer satisfaction level and NPS is a flexible tool, which addresses the needs of the public sector. Based on the surveys we distributed to the employees, but also to stakeholders and clients, we analyzed if an increase in the employee satisfaction level may influence in a positive way the satisfaction of the clients. In addition, we identified the main pressure points and improvement opportunities for the employees, such as process improvement, digitalization, better resources allocation or development of career plans, but also from the client’s side- extend the service-oriented approach, increase speed of execution or enhance expert knowledge. Starting from the NPS implementation model within a private shared service center, the present article has as main purpose to proof the importance, benefit and advantages of implementing such a satisfaction measurement tool within the public sector.

Citizen satisfaction and expectations in the public system

As mentioned previously, citizens are the main stakeholders in the public sector. However, there are differences between the stakeholders using the public services, as some of them may have direct contact with the institutions and other not. Andreassen (1994) defines citizen satisfaction as a combined result between the expectation and the perception of the customer related to a service or a product. In addition, citizen satisfaction is not represented only by one service situation, but it sums up more experiences of the customer to date. According to Van der Waldt (2004) it is essential for a public institution to define clearly, who its clients are, what are their needs and what action needs to start in order to increase their satisfaction level. Usually the public sector is known as an institution with delays, inefficiency, low customer satisfaction level and not customer-oriented strategy. However, the public service tends to be more responsible and to transform their policy in such a way in order to put the citizens on the first place and to set principles, which regulate the behavior, and services which this sector. Hirschman (1970) developed satisfaction research in order to measure the loyalty

level. Depending on the provided products or services, which are provided, the customers may be exposed to different perceptions, which in the end lead to satisfaction or dissatisfaction. Based on this, stakeholders of public sector, represented by citizens, may react in two ways: they stop using the services, which were not at the expected level or the voice their opinion by giving feedback and expressing their dissatisfaction directly to the public organization (Hirschman, 1970).

In comparison to the private sector, where customer satisfaction is related only to a product or a service and it is very easy to evaluate the satisfaction grade, in case of the public sector citizen satisfaction is not only a result of public sector performance, but more a combination of stakeholder expectation and results (Van Ryzin, 2004).

Many public sector organizations invest money in the implementation of satisfaction surveys but manage to get the feedback only from the satisfied citizens, while this type of feedback does not support the improvement and increase of effectiveness. The tool implemented for the measurement of customer satisfaction should support the organization to understand the satisfaction level, but also dissatisfaction that in most of the cases is not reflected. Such complete results are analyzed and the strengths, weaknesses and improvement opportunities can be easily identified, supporting the management to improve the strategy and increase the effectiveness. In addition, this tool will support the public organization to know their customers better and get closed to their expectations. Another important advantage of implementing a satisfaction measurement tool is that it provides an overview on the issues, which are in the control of the public organization or not (Thijs, 2011).

Based on the research developed by James (2009) a high satisfaction level of the customers might be influenced by low expectations over the service level, but in parallel, a low satisfaction level might reflect a high expectation over performance. For this reason, managing customer expectation should be one of the main tasks of the management when it comes to defining strategies, especially in the organizations where the customer expectations are not met yet. In addition, managing expectations might support organizations to identify the gaps in the actual strategy (Olkkonen, 2015).

Net promoter Score (NPS)

Frederick F. Reichheld (2003) introduced the term of Net Promoter Score for the first time in his article, called "A Number to Grow" in the Harvard Business Review of December 2003. To capture this customer trend, he asked one question: "How likely are you to recommend Company X to a friend or colleague?". This question later became known as "The Ultimate Question" in the bestseller of 2006 with the same name. The answer to the questionnaire is represented by a number on a scale from 0 to 10, where 0 means "not likely", 5 means neutral and 10 means "extremely probable". Customers with 9 and 10 ratings had the highest repurchase and recommendation rates and are named "Promoters". The "Passives" being satisfied, but not loyal - gave ratings of 7 and 8, and customers with ratings from 0 to 6 were called "Detractors". The Net Promoter score - defined as the difference between the percentage of promoters and the percentage of detractors - correlates directly with the rates of revenue growth in most of the industries examined. There is widespread recognition among researchers that loyalty can be measured better by using more questions than by using a single question.

The reasons for this theory are based on research. One of the reasons is the statistical reliability. Therefore, if a respondent is asked the same question twice or two similar questions are presented to them, and the respondent gave the same answer in both cases, we may consider that the method by which the respondent is asked a single question is more relevant. Another reason is conceptual in terms of the fact that there are several aspects of loyalty, and a single question addressed cannot refer to all these elements. There is still no general rule among companies regarding the set of questions that should be addressed to the respondents

to measure loyalty. It has been shown that NPS plays a very important role in correlating the growth prospects for the company, but also that it is one of the best indicators of the loyalty of employees or customers. The maximum NPS score is 100 and the minimum score is -100 (Reichheld, 2003). According to the database provided by David Frenay (2016), the average Net Promoter Score is estimated at 34.3%.

The scale presented above is useful for organizations to focus on two major objectives: maximizing promoters and minimizing detractors. However, in order to provide real NPS value, it should be borne in mind that this performance indicator may vary by industry or geographical area of business. An accurate Net Promoter Score is essential for identifying threats and opportunities and maintaining customer balance. From the above description of what is NPS two of the major advantages of this system are illustrated: it is easy to understand and easy to calculate. Both are clearly important attributes when analyzing employee or customer loyalty, both within the organization and externally.

Customer advantages and disadvantages of implementing NPS

Before implementing a Net Promoter Score type survey among customers, it is very important to analyze the advantages and disadvantages of this performance indicator. Among the main advantages of NPS we count (Survey Monkey):

- is an easy-to-use and intuitive system;
- is an excellent management tool;
- has a common language for the classification of employees or customers;
- is correlated with the degree of business growth;
- is a benchmark source.

The online implementation of an NPS type questionnaire does not require the involvement of a person specialized in statistics to administer it. The whole concept of this type of questionnaire is concentrated around a simple idea: if the employees or clients are sufficiently dedicated to the company, to recommend it. In addition, the questionnaire comes with some additional questions that help to identify the reasons why employees, respectively customers tend to recommend or not the company with which they collaborate. The distribution of the questionnaire can be easily done in the online environment, and the calculation formula is intuitive and involves a simple calculation operation.

Depending on the score given by NPS clients, they classify the respondents in three more categories: promoters, detractors or passives. The categories make it easy to classify the level of loyalty of customers or employees and help the company clearly delineate these groups of respondents. Thus, the company can identify a group of promoters that it can invite to post reviews or participate in focus groups. Also, greater attention can be paid to detractors and problems can be easily identified so that processes are improved and service quality is increased.

In addition to the advantages presented above, the implementation of a Net Promoter Score type questionnaire among employees or clients may also have disadvantages such as (Ron, 2011): it is not a sufficiently specific system; without an action plan established following the results, the NPS questionnaire will not bring any benefit to the business.

The results of the Net Promote Score type survey can be considered the mirror of the company. If the reflection of the company is unclear and disordered, it might be uncomfortable for the company to carry out an analysis of the portrait in the mirror.

The need for companies to ask additional questions following the implementation of a Net Promoter Score questionnaire is natural and helps to identify the actions needed to improve services or working conditions. Although there is a balance between asking too many questions and trying to minimize interview time, the extreme of a single question can be too biased not only in terms of organizational needs, but also towards the client. If the

organization does not have enough information following the survey, then the client or employee interviewed may become frustrated due to the lack of change and involvement of the company in improving the quality of services.

NPS implementation within a private company

In the present article, we will present the results of implementing the NPS satisfaction measurement tool within a Romanian shared service center, which delivers services for the whole group of an Austrian company, active in the oil and gas industry.

The work performance of the employees of an organization and the fulfillment of the individual and organizational objectives obviously depend on their satisfaction and motivation. Although it is an obvious fact, specialists in performance management, sociology or psychology have conducted numerous studies in this regard to demonstrate this connection. Thus, we initiated the implementation of an NPS type questionnaire (Net Promoter Score) both among the employees (eNPS), as well as among the clients (cNPS) for whom services are provided globally.

The main objective of this study is to identify and analyze the impact of the implementation of an NPS type survey both among the employees and among the clients of a private organization in increasing the level of performance and satisfaction. In order to increase the job satisfaction of the employees, we must analyze the extent to which, each of the variables identified in the questionnaire influences NPS score.

The survey has been distributed using two approaches. On the one hand, we tested the level of satisfaction of the company's employees and the improvement measures that can be proposed following the feedback provided by the respondents, using the NPS type survey. On the other hand, we distributed the same type of survey among clients to measure their level of satisfaction with the services provided by the employees, but also to verify the existence of a link between the level of employee satisfaction and the degree achievement of organizational objectives. The NPS survey was considered the most appropriate for the data collection to ensure the support of this research. The questionnaire addressed to the employees contained the specific NPS question with unique answer ("On a scale from 1 (least likely) to 10 (most likely), how likely is it to recommend our company as an employer"), two questions and four demographic questions about the respondent regarding sex, age, the business unit to which he belongs and the age in the company.

The questionnaire addressed to clients only covered the representative question for NPS, with the possibility of a unique answer on a scale from 1-10 ("On a scale from 1 to 10, to what extent do you agree with the following statement: I am completely satisfied by the services offered on your company) and a single question about the respondent to identify the business unit to which they belong. The questionnaires were completed online. Both questionnaires were distributed in June 2017 and 2018. The survey based on the questionnaire was carried out over two years, on a sample of 1,158 employees and 2,383 clients in 2017, respectively 1,145 employees and 2,030 clients in 2018:

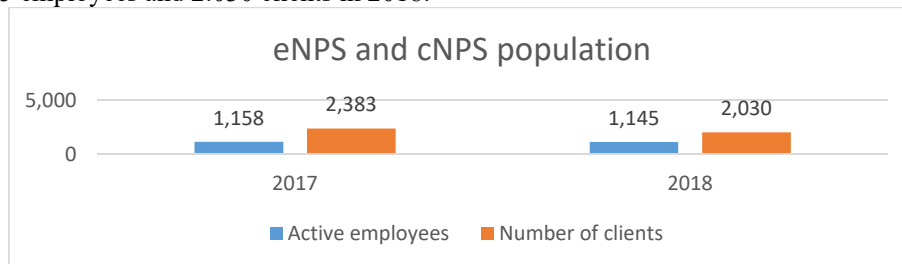


Fig. no. 1 eNPS and cNPS population

Source: authors' data processing study

The response rate within the employee and client's population was high in both years, reflecting the fact that such surveys were appreciated by both categories. In addition, the high response rate proof that the communication and promotion of the research survey was successful and the measures applied from one year to another met the employees and clients expectations.

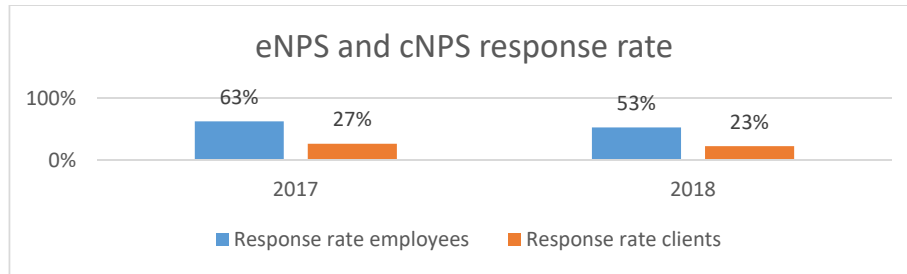


Fig. no. 2 eNPS and cNPS response rate

Source: authors' data processing study

Starting from the results of the respondents mentioned below, an eNPS indicator of 37% was calculated in 2017, respectively 54% in 2018. The growth is significant, but at the same time it is influenced by the lower number of respondents registered in 2018 compared to 2017. However, the eNPS indicator registered by the company studied in both years shows a high level of employee satisfaction. In addition, the level of the eNPS indicator is comparable to that of well-known companies on the market, such as AirBNB (37%) or Facebook (57%) (Comparably, 2017).

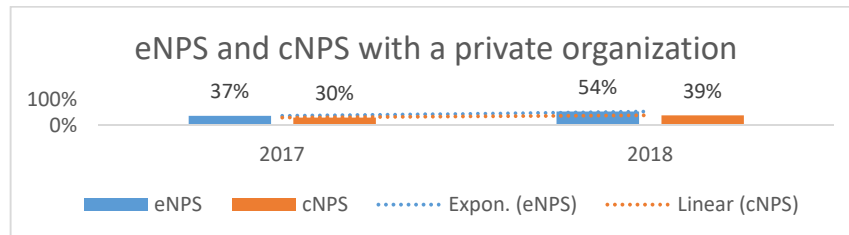


Fig. no. 3 eNPS and cNPS within a private organization

Source: authors' data processing study

The research results show that the increase in the eNPS score lead to the same trend for the cNPS score. The results of our study proof that satisfied employees lead to an increase in productivity and service level. By implementing a satisfaction measurement tool such as NPS within the employee and customer population, it is easy to identify the level of “happiness”, but also the reasons, which stay behind their dissatisfaction (fig. no 4). In this respect, we added an open question -“If you were the Managing Director and taking into account the current economic context, what changes would you make to consider giving the company a higher rating?”

Promoters	Passives	Detractors
•improve working procedures where needed •Take over several activities from abroad •Implement a collective salary increase to motivate the employees •Change the company's culture to a more customer-oriented one, both for internal and external customers, by promoting a self-oriented attitude, where people are accountable for the entire process, not just part of it that they "own."	•Change the performance evaluation system - direct link with the promotion / bonus system •Be more attentive to the criteria according to which the managers of teams and departments are appointed, so that they have real competencies in the area of activity they manage. •Allocation of sufficient resources (personnel) for the volume of work (including the correct estimation and planning of their time). •Have a better career plan for the employees	•Using a current technology (digitalization). •Decrease the average age and would include all employees in job rotation in order to have a broader picture on the activity. •Proceed to regular professional evaluations •Transparency, access to new projects and information •Increase collaboration between the teams. Share the knowledge between areas / departments. Offer different opportunities for employees to change areas

Fig. no. 4 Improvement opportunities as result of eNPS

Source: data processing study

Similar to the employees, the clients were asked about the improvement areas to which the company should pay more attention.

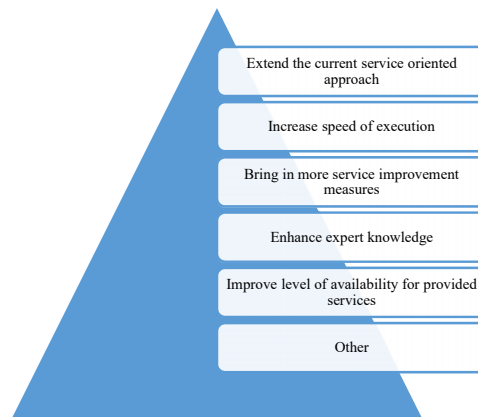


Fig. no. 5 Improvement opportunities as result of cNPS

Source: authors' data processing study

The flexibility of including additional questions to the main NPS standard one offers the company the possibility to collect fast and simple feedback from the employees and clients and to identify the weaknesses and opportunities where it is need for improvement. For sure such initiative would be useful and much appreciated also in the public sector, especially that the questions is simple to answer and it doesn't take much time to fill it in.

Conclusions

As mentioned at the beginning of the present article, Net Promoter Score is a used mostly in the private sector, being a popular tool for employee of customer satisfaction measurement. However, not many researchers or public organizations representatives decided to implements such survey within the public sector. The private sector main goal is the revenue, while the public sector concentrates on the approval and fulfillment of their purpose. However, either type or organizations need a tool of measuring customer's satisfaction and loyalty. As the trend in the private sector is to develop systems used for measuring reputation, the public sector organizations need also one. Independent if the priority of the organization is to achieve a specific profit or to seek mainly outcome, such objectives define reputation management. The research has many limitations and more theoretical background is needed from a public sector perspective. The results require more testing and a deep dive on this topic. In addition, the lack of experiences or research on NPS in public sector bring a gap in our study. The

sampling and the results of the study were large enough, however, as a next step a survey within the public institutions would support and enforce the importance of implement the NPS survey. In conclusion, we can say that NPS is an extremely attractive management tool, representing a simple figure, at least in the first phase; it has to do with an important KPI of the company. There is research that shows that this type of questionnaire has credibility and can be associated with a loyalty guru of customers or employees. Although the result is a figure, NPS cannot provide the complete set of information, so the company knows what strategy to follow in order to raise the score and increase the number of promoters. Thus, we can consider that the recipe for success can be a combination between NPS and another complementary method by which action findings can be offered.

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HOSTING MEGA-SPORT EVENTS – COSTS AND BENEFITS FOR RUSSIA

Iuliana Pop¹, Daniel Bulin², Adrian Lucian Kanovici³ and Laura Brad⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

²⁾ *Institute for World Economy – Romanian Academy*

E-mail: iuliana.pop@rei.ase.ro; E-mail 2: daniel.bulin@com.ase.ro;

E-mail: adrian.kanovici@rei.ase.ro; E-mail: laura.brad@fin.ase.ro

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Abstract

The organization of sports competitions far exceeded the specific importance of events addressed exclusively to the fans. Major mega-sports events (World Football Championship /European football tournaments, summer/winter Olympics) are a pillar of regional development, particularly in emerging countries over the last two decades – in the first stage directly, through infrastructure investments, and then, indirectly, through the multiplier effect, stimulating the tourist circulation and promoting the country image. The research objective of the present paper is to highlight the costs and benefits of organizing a mega-sport event, taking as a case study the cost-benefit analysis of the organization by Russia of, the World Football Championship in the summer of 2018. Relying on the available data from the International Federation of Association Football/Fédération Internationale de Football Association (FIFA), the authors make a quantitative research regarding the importance of the mega-sport events on the tourism phenomenon in the Russian Federation.

Keywords

Tourism, mega-sport events, cost-benefit analysis, economic impact.

JEL Classification

L83, Z32, Z29, D61

Introduction

The sport tourism, comprising the tourism for mega-sport events such as the World Championships, becomes more and more important. Between June 14 and July 15, 2018, Russia has organized, the 21st edition of the World Football Championship. As host of the first such event in Eastern Europe, Russia had the second chance, after the 2014 Winter Olympics in Sochi, to test its organizational capacity.

After Beijing – 2008 (Summer Olympics), South Africa – 2010 (World Football Championship), Sochi – 2014 (Winter Olympics), Brazil – 2014 (World Football Championship) and Rio de Janeiro – 2016 (Summer Olympics), this is the 6th mega-sport

event and the third final World Championship tournament organized in a country of the BRICS (Brazil, Russia, India, China, and South Africa) group in the last decade. If we add Qatar to the list, the future host of the world championship in 2022, we can see that we are going through a period when emerging countries are the predominant choice of sports venues. At the 68th FIFA Congress in Moscow, the decision was taken that in 2026 the World Football Championship will be organized by the North American trio of USA-Canada-Mexico. It will be the first time such a final tournament will be organized together by three states.

Based on this trend, analysts at the Union Bank of Switzerland (UBS), a Swiss financial company, are asking whether nations with a tradition in football, such as Germany, France, England, Italy or Spain, are still willing to invest massively in organizing such events. One explanation could be that the return on sports investments could be much lower for most of the developed European countries than for emerging countries such as Russia (UBS, 2018). For the Russian Federation, as host country, it is a real challenge to ensure the investments for the specific infrastructure.

In the next section of the paper, the authors make a review of the scientific literature pointing out mega-sport events' significance. The main part of the article proposes a brief costs-benefits analysis using statistical data provided by the FIFA Report (2018a, 2018b). Finally, the article presents its conclusions regarding the costs-benefits for Russia after the FIFA 2018 World Championship.

Review of the scientific literature

Tourism is one of the economic activities with a spectacular dynamic, both in terms of the number of visitors and the collected revenues, and of diversifying the forms of tourism practiced.

The tourism industry has begun to recognize sports tourism (Ross, 2001) as the travel experience made to participate in or view some sports-related activities, being recognized three types of sports tourism: "sport event tourism, active sport tourism and nostalgia sport tourism."

Events-sports tourism includes major events, such as the Olympic Games or the Football World Cup. In fact, both the 1994 World Cup and the 1996 Atlanta Olympics in the USA have been heavily promoted as tourist attractions.

Regarding the size of the event, Müller (2015a), develops a definition and creates a classification scheme for mega-events. Based on the review of the existing definitions, it proposes four constituent dimensions of the mega-events: attractiveness for visitors, attracting attention through media and technology, costs and transformative impact. The mega-events costs amount to hundreds of millions, if not billions, of dollars. It is important to point out that these costs, for the same type of event, differ depending on the host country or city, from the number of visitors to the value of the radio-television broadcast rights. The cost of the World Cup has increased from US\$ 7.5 billion in South Africa in 2010, to US\$ 14 billion in Brazil in 2014 (Gaffney, 2014) and about US\$ 21.5 billion in Russia in 2018 (Müller, 2014). Many of the sports events were hosted after World War II, predominantly in countries of Western Europe, North America and Australia (Dowse and Fletcher, 2018). This was due, first of all, to the post-war economic advance recorded by the states in these regions.

Over the past few decades, FIFA has chosen as locations for the World Cup countries that did not have a strong football legacy, partly due to the globalization of football, the most popular sport in the world (Arnold and Foxall, 2018).

Selected host for the 2018 edition, Russia can set an example in this regard, within certain limits. The World Cup is another step on the path of Russia to become a soft power, of first rank, on the global stage (Sherr, 2013), and the country expects to have a tourism demand and greater visibility abroad. Among the positive consequences of the mega-sporting events, we

can talk about the development of a green economy for the host country (Preuss, 2013), FIFA focusing on reducing the ecological footprint of the event.

Müller (2015b) identifies the mega-event syndrome, that is, a group of seven symptoms that occur together and affects mega-event planning, including oversized benefits, underestimated costs, and redefining planning priorities using public resources for private interests and suspending current legislation.

Arnold (2018) presents the use of sports as an instrument of government policy in Russia, to encourage nationalism, arguing this with five key mechanisms.

The World Cups, like the 2014 Sochi Olympics, are benchmarks for global sports events hosted by Russia. Beyond the sports connotations, these events are part of Russia's strategy to improve its international profile and dynamise changes in infrastructure (Makarychev and Yatsyk, 2014).

3. Research methodology

As the organization of a World Football Championship involves many complex aspects, generating controversy over the economic and social effects and the lasting real benefits resulting from this large event, we are entitled to ask ourselves what will be the real impact of the event hosted by Russia; possible answers can be given from both past experiences, and especially from an assessment of costs and benefits.

Starting from this question, the research objective is to highlight the costs and benefits of organizing a mega-sport event, and the impact it has on the host country's economy, in general, and on international tourism activity in particular. To meet this objective, the authors propose a case study on the final tournament of the World Football Championship held in Russia between June and July 2018.

The desk office research is based mainly on the analysis of the official public documents made available by the FIFA and the organizing institutions.

4. Results and discussion

4.1. Cost-benefit analysis

The structure of costs for organizing the tournament includes the operating expenses and capital expenses which include sport infrastructure, transport infrastructure and other infrastructure (Fig.no.1).

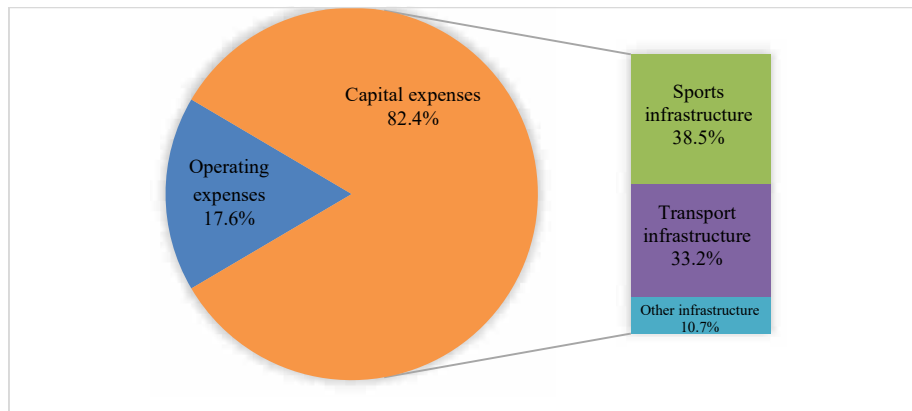


Fig. no. 1 Structure of the costs for organizing the tournament

Source: the authors on the basis of the data of the FIFA, 2019

In another analysis, it is shown that the relative level of investments for the World Cup in 2013-2017 represented only 1% of the total investments (Al-Toukhi, 2018). For comparison, the volume of expenditure is slightly less than half the one involved in the preparation and organization of the Olympic Games in Sochi, whose effects were to increase on average about 1 percentage point in the gross domestic product (GDP) of Russia in the last 6 years (Tanas, 2018).

Returning to the discussion of the profitability of such an event, a report from Moody's shows that the final world championship tournament will have limited and short-term economic effects, even lower than the Sochi Olympics Games (Tanas, 2018). The figures advanced by analysts show that the direct impact of the event would be between 1 and 2% in nominal GDP at the regional level, and the multiplier effect will not exceed 3% in any of the regions with host cities.

Of course, although the improvement of the regional infrastructure can only have beneficial effects, it is not anticipated a real strong long-term impact, and this is in the light of the sectoral structure of the Russian economy; the sectors benefiting from tourism, in particular hospitality, trade, transport, do not have a significant share in most local economies, as shown by Moody's analysis. However, the impact of investments will be felt in the host cities, by improving the transport infrastructure, public services and utilities (Al-Toukhi, 2018).

Studies at the Gaidar Institute for Economic Policy in Russia are rather on the same pessimistic line. At the beginning of 2018, Russian specialists pointed out that the economic activity generated by the organization and conduct of the tournament would add up to a maximum of 0.2% to the annual GDP growth, both in the second and third quarters of 2018. Moreover, the Central Bank pointed out that the final tournament could cause a rise in consumer prices. This has been confirmed (for example, some hotels have increased their tariffs even by 5000%). Although the Central Bank estimated at the beginning of 2018 that the inflation will be below its four percent target, at the beginning of 2019 this value was exceeded, reaching 4.3% (IntelliNews, 2019).

In the final official report published by the organizers in September 2018, it is estimated that the event could have an impact for the period 2013-2018 of about US\$ 16.6 billion (RUB 952 billion), and that the 2019-2023 annual impact will be or US\$ 2.6-3.7 billion (RUB 150-210 billion) through the contribution of the tourism and construction sector, to which would be added the subsequent effects generated by public investments (FIFA, 2019). Thus, the cumulative volume of the total expected impact on the Russian economy will be in the range of US\$ 31 billion, the anticipated value by the preliminary official report (FIFA, 2019).

For the period 2013-2018, the economic effects of the tournament include:

- A contribution of nearly US\$ 16.6 billion in GDP (RUB 952 billion), the equivalent to about 1% of GDP;
- Creating and maintaining about 315,000 new jobs annually, which will result in an increase in population incomes estimated at almost US\$ 8 billion (RUB 459 billion);
- Another approximately US\$ 2,4 million in additional tax revenue from the federal and the local budget;

The evolution of the expenses in investments and operations, after 2013, respectively of the tourism revenues from 2018, is illustrated in Fig. no.2. The effects on tourism are only taken into account for 2018 and the following period, even though in 2017 the Confederations Cup took place, a traditional competition that takes place one year before the World Cup, rather with an organizational testing role. Thus, the projections of the organizing committee are as follows: US\$ 2.6-3.7 billion per year in the period 2019-2023, between US\$ 1.9 billion and US\$ 2.4 billion as a multiplier effect of investments and operating expenses, and another US\$ 700 million – US\$ 1.3 billion in revenue from tourism.

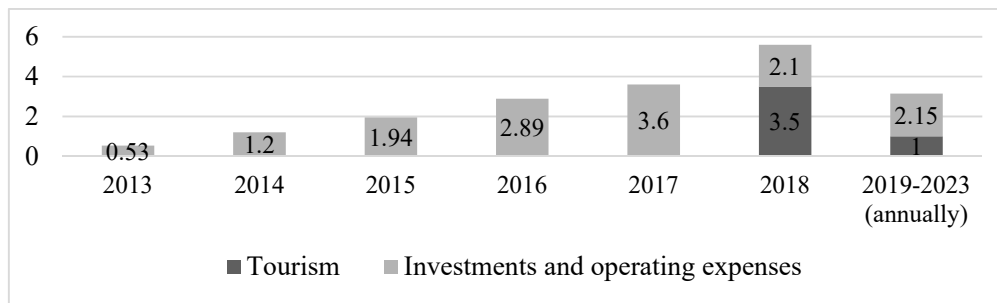


Fig. no. 2 The impact of the final tournament in the economy of Russia (US\$ billion)

Source: the authors on the basis of data of the FIFA, 2019

Note: prognosis for the 2019-2023 period – average values, calculated by the authors

In the medium-term, especially through the effects on the tourism sector and those catalyzing investments, a total number of between 160 and 240 thousand new jobs are expected in the next 5 years, but also a boost in the turnover of small and medium companies, average estimated in the range of US\$ 2.25 – 3.31 billion.

For a clearer picture of the economic impact, compared to the same type of events since 2002, we note that the estimated US\$ 15 billion effects in the medium-term would be exceeded only by the impact produced in Japan's economy following its co-organizing of the first tournament in Asia. However, the share of 1.1% in GDP is significantly higher than that obtained by the Japanese, of only 0.3%, being surpassed only by South Africa (2%), a significantly smaller economy.

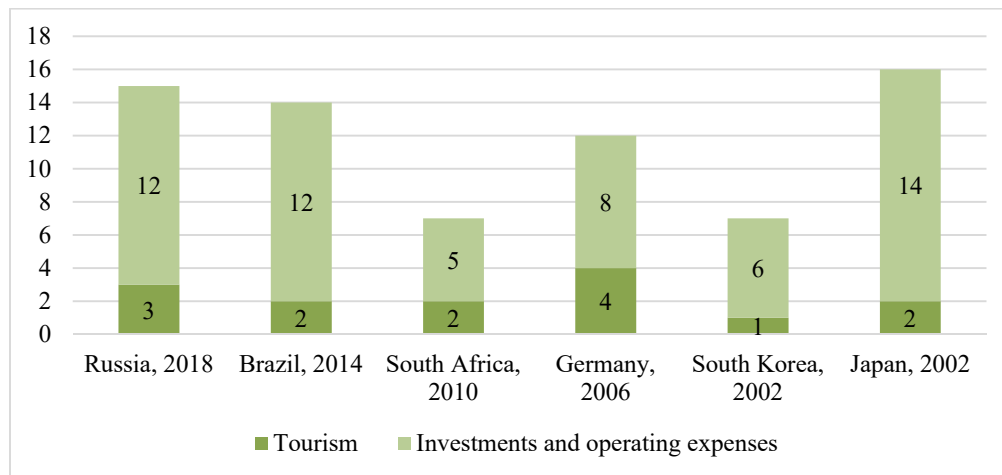


Fig. no. 3 The impact of the final tournament in the economies of organizing countries (US\$ billion)

Source: the authors on the basis of data of the FIFA, 2019

Note: For Brazil, the estimations in tourism are 1-2 US\$ billion, and for Germany the estimations for investments and operations are 7-8 US\$ billion

As shown in Fig. no. 3, tourism revenues represent 21% of the total impact, a lower share, for example, than that of South Africa (32%) or Germany (35-40%). However, the tourism sector remains one of the winners of such mega-events and would have most to gain from this tournament.

4.2. Impact on tourism

An analysis before the run of the world championship, conducted by UBS, starting from the demand for tickets (3.2 million tickets) and the ratio between Russian and foreign fans, showed that the number of foreign tourists during the World Cup period could rise at 1.6 million – a rise of only 6.5% compared to 2016 arrivals. Strictly mathematical, this would not have been a real boom, given the growth rate of over 5% in the 2014-2015 period of Russian tourism (UBS, 2018). Moreover, as the enthusiasm for football is not shared by all travel enthusiasts, this increase could even be mitigated, as some of the potential tourists may have reoriented to other destinations in the summer of 2018.

Estimates from the preliminary report for April were even lower, of only 570 thousand international tourists out of a total of about 1.3 million. However, most of the more than 700 thousand Russian tourists would have been residents of other regions. In addition, as the average stay is expected to be 2.5 times higher than the average, reaching a record 12 days during the tournament, the expected revenue is expected to be significantly higher than in previous years (according to final data provided by World Tourism Organization), revenues from Russia's international tourism totaled US\$ 8 billion in 2016, (UBS, 2018).

However, according to the final report of September 2018, the event generated only 487 thousand international viewers and 605 thousand Russian viewers. Concerning these figures, the organizers point out that the number of international tourists present at the World Football Championship includes those from the US (8%), Germany (5%) and Brazil (4%) (FIFA, 2019).

Investments in transport infrastructure – in particular the modernization and supplementation of facilities in airports, may have a long-term impact on Russia's position in international tourist flows, even though UBS analysts question the ability to attract more long-term tourists. They argue that large distances, climate, and availability of alternative destinations are factors that could limit growth potential. Moreover, it is estimated that the tourism industry in Russia could benefit from a momentary and only marginal boost: the components of the tourism industry – food, accommodation, communications or transport will register a temporary increase in revenues (Fig.no.4).

On the other hand, investments in transport infrastructure will result in higher passenger flows, even after the event (Al-Toukhi, 2018).

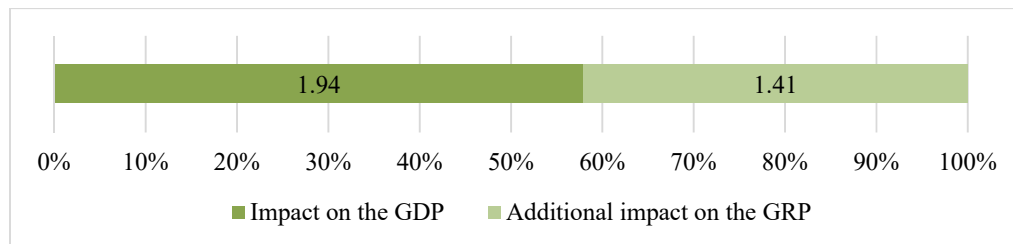


Fig. no. 4 The impact of tourism in GDP and GRP (US\$ billion)

Source: the authors on the basis of data of the FIFA, 2019

The World Cup has a considerable economic effect, said Deputy Prime Minister Arkady Dvorkovici, adding: *"The tournament has already stimulated the economic development of the host regions and will continue to have a positive long-term economic impact"* (FIFA, 2019). In support of this statement are estimated that 40% of the total tourism contribution will go to the regional authorities: US \$ 1.41 billion.

Conclusions

The World Cup is an important sport event that will give Russia a new international exposure. While at the national level the economic effects are considered to be rather reduced, at local and regional levels they will be felt even in the long-term. As with other mega-sport events, the figures on the economic impact for previous tournaments are contested, given the difficulty of isolating the effects directly associated with the World Football Cup from other economic factors.

In any case, to the direct effects on the tourism and the adjacent sectors will be added those of multiplication due to the development of the infrastructure, the investments in this respect being the main visible result. The effects of learning and knowledge, both for the business environment and for the population, are long-term benefits, although difficult to quantify.

At the sports level, the direct effects of the tournament are felt the most in terms of stadia and training grounds, most of them being newly built. Their sporting and social value, however, depends on their ability to attract viewers and be used effectively in the future. Examples in recent history offer no ground for optimism: South Africa or even Brazil despite its tradition in football, did not capitalize on these investments (for example, the Manaus stadium was built in the Amazon jungle).

Of course, such an event also has a social and geopolitical value, and Russia seeks to consolidate its image of great power, challenged after the Cold War and, especially, after the collapse of the USSR. The results of some studies, also included in the final report, show that 79% of Russian believe that the final tournament will improve the country's reputation and strengthen Russia's position in the global arena, and 69% believe that the event will enhance patriotism and national unity. Regarding the perception of international tourists, 84% of those interviewed during the world championship said they have improved their perception of Russia, due to the positive experiences recorded, while 90% of them would recommend Russia as a tourist destination to friends and relatives (FIFA, 2019).

These figures reinforce the results of the studies conducted after the FIFA Confederation Cups (the last competition) unfolded when it was appreciated that this brought a better perception of Russia internationally, a perception confirmed by the positive comments made in the media: 98% of tourists rated the experience in Russia in 2017 as positive, while another 80% said they had improved their opinion about this country. Therefore, the long-term effect, less visible in figures, could be that of improving Russia's country brand.

The limits of the research are subjective, inherent in the applied methodology – the analysis is based on the statistical data offered to the public. Future research directions could target the long-term impact analysis as well as the costs (investments) – benefits (multiplier effect of investments, tourist circulation, and country brand assessment) analysis.

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BASIC TOURISM CONCEPTS IN ROMANIA

Iuliana Pop¹, Claudia Rodica Popescu², Luciana-Floriana Holostencu³ and Delia Popescu⁴

1) 2) 3) 4) The Bucharest University of Economic Studies, Romania

E-mail: iuliana.pop@rei.ase.ro; E-mail: rodica.popescu@rei.ase.ro;

E-mail: luciana.holostencu@yahoo.ro; E-mail: delia.popescu@com.ase.ro

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Abstract

Tourism represents a social, cultural and economic phenomenon regarding people's mobility to unfamiliar places, beyond the borders of their conventional residence, being usually motivated by pleasure or other personal interests and, therefore, gaining a high-level of economic impact, as well as a natural and built environmental influence. The present study is intended to provide a comprehensive framework for a few of the frequently used tourism concepts. While most studies focus on the economic perspective of concepts like visitor, tourism types, official indexes, ratios or other indicators, this research will focus its attention on five notions which have different but also similar meanings, in a triangular contextualization governed by geography, economy and legal sciences. The present study, might be useful for both students and faculty members interested in the acknowledgment of a structured and more accessible tourism taxonomy, considering the peculiarities of each of the three fields of research.

Keywords

Tourist attraction, tourism potential, tourism heritage (patrimony), tourism resources, tourism region.

JEL Classification

A12, L83, K39, Z30, Z32

Introduction

Tourism represents a complex of dynamic activities strongly defining the economic performance of the 21st century. Given the fact that tourism is the main object of study for both geography and economy, inasmuch as a legal context, a deeper analysis is required in order to understand the particularities of each specialized section of terminology. Therefore, the following analysis will encompass not only the specific standpoints of geographers and

economists on explicit theoretical concepts, but is also going to enclose the legal approach, as all these concepts are subjects prone to specific regulations.

Tourism geography was established relatively late as a distinct branch with its own particularities, as it was in the economic literature. This process occurred after the Second World War mainly because many specialists had unilaterally looked at the processes and phenomena carried out in a seemingly marginal area of human existence, namely: the recreation and the physical-psychological recovery (Coccean, 2005). Thus, the work of N. A. Rădulescu, *Asupra geografiei turismului* [On tourism geography], from 1946, constitutes the first paper in this field of research, considering that tourism geography studies "...relations between the tourism phenomenon, the geographical environment and the social environment". In fact, until 1950, tourism was almost exclusively an economic domain due to its contribution to the economic development of the country. Moreover, the attention over this subject has increased after 1960, when tourism activity was expanding, being strongly connected to the environment.

Geography studies tourism as a spatial and temporal phenomenon, which takes place in an environment in interaction with social and environmental factors, but also as an activity that has an indisputable impact on the environment (Glăvan, 2010). The complex of natural conditions contributes to the formation of material support to all tourism activities and consists in motivations that trigger tourist flows, mainly when its characteristics have unique aesthetic values (Coccean, 2005).

Literature review

After an ample process of studying Romanian literature and regulations, several approaches have resulted, and while there are voices that accept some concepts, other researchers try to enrich the definitions of these concepts with their own vision and knowledge. These divergent opinions have created more often than not confusion among geographers and economists, each researcher taking over theories from the opposite field of research. This phenomenon can also be explained through the fact that some tourism disciplines are taught by geographers in economics-profiled universities or the other way around. In this case, we assist to a custom-made adjustment made to each study program by using a roughly common terminology in order to best meet the students' needs.

In pursuance of analyzing the selected tourism terminology, an extensive process of studying was carried out following the subsequent sources of information: the current geographic literature at national level related to tourism (tourism geography, tourism potential, etc.), the terminology used in different forms of oral discourses (it refers more to scientific sessions and conferences), but also official statements of specialized forums, such as the Ministry of Tourism, as well as geographical or economic glossaries of tourism and the updated legislation in this field of study. Hence, considering glossaries' contents, which are in part object of the present analysis, the terms: tourist attraction, tourism potential, tourism heritage, tourism resources and tourism region have been found in *Dicționar de geografie umană* [Dictionary of Human Geography] (Erdeli ed., 1999), *Dicționar de terminologie turistică* [Dictionary of Tourism Terminology] (Stăncioiu, 1999), *Dicționar poliglot explicativ de termeni utilizați în turism* [Polyglot dictionary explaining tourism terms] (Stănculescu et al., 1998) or in *Dicționar esențial de afaceri și servicii* [Essential Dictionary of Business and Services] (Ionciță et al., 2014), with particular approaches to each specific domain.

Tourism resources are analyzed in works of tourism geography written by Coccean (2005), Glăvan (2006), Căndea et al. (2012), in which are presented alternative terms, such as attractive resources, starting precisely from a territory's attractiveness elements. The tourist attraction is illustrated in particular works belonging to Coccean (1996, 2005) and Căndea et al. (2012). On the other hand, the tourism potential enjoys a broader analysis, in numerous

works and studies, such as: Cucu and Iordan (1984), Neguț (2003), Cocean (1996, 2005), Glăvan (2006, 2010), Ielenicz and Comănescu (2006), Căndea et al. (2012), and tourism heritage can be found in works belonging to the researchers like Ielenicz and Comănescu (2006), Căndea et al. (2012). The tourism region are approached by Cocean (2005) and Ielenicz and Comănescu (2006).

Regarding conferences and public presentations or speeches, the problems of tourism geography have been on the table of numerous scientific communications, which were presented at international congresses of geography, starting with the Warsaw Congress in 1934 or at the International Congress of Geography in London (1964) when Japanese professor Jukio Asaka presented the main problems of tourism, in general and, in particular, the problems of the Japanese tourism industry, among which we find, first of all, the examination, preservation and stimulation of tourism resources use, as in: natural monuments, historical relics, cultural attractions (Șandru, 1978). Undoubtedly, numerous recent manifestations address a multitude of aspects, which hold onto the evolution and diversification of tourism activity, both on a national and international scale.

Methodology

The present study aims at creating a brief glossary of tourism concepts from Romanian literature, analyzed from a geographical, economic and legal perspective. In order to reach the previously mentioned goal, the empirical methodology was adopted, by analyzing the content of various tourism articles published in special editions of the scientific journal *Amfiteatru Economic*, dedicated to the tourism issues, in close connection to CACTUS Conference research objects.

The initially stage consisted in developing a comprehensive list of tourism concepts by investigating mainly the Romanian academic literature and legislation glossaries, as well as national or international scientific researches. Subsequently, by reviewing the extant literature and body of law, we erased the concepts which were not in accordance to the object of this paper, thus remaining five key concepts and their subsidiaries.

Therefore, the main concepts that resulted were: tourist attraction, tourism potential, tourism heritage (patrimony), tourism resources and tourism region. Starting from the identified terms, we have added a few items that are used in the literature due to their similarities or having a similar meaning, without being explicitly mentioned in the keywords of the paper, but which are considered suitable for the scientific research.

Results and discussions

Tourism, regardless of its diversified forms, takes place in a geographical environment and is determined or influenced by some natural, economic and social components.

The Romanian literature on the subject has presented various concepts and terminologies regarding the concepts of potential and tourism heritage. From a taxonomical point of view, the following important units can become subject for a deeper analysis: tourism region, tourism area, tourism centers and tourist attractions (Cocean et al., 2005). Before starting the following analysis, it is important to mention that considering the legislation in force, Emergency Government Ordinance (GEO) No. 58/1998 regarding the organization and development of tourism activities in Romania, presents the main aspects defining tourism terminology.

A tourism region is a comprehensive category, represented by a large territory (generally geographical units) where the main practiced activity is tourism and its other complementary activities (Stăncioiu, 1999). It is characterized by an indisputable concentration of tourist attractions (Cucu and Iordan eds., 1984), and has a wide variety of unique landscapes boosted by the means of: specific relief forms, unique climatic elements,

which determine stable tourist flows and where various tourist activities with social-economic significance are carried out (Erdeli ed., 1999).

From an economic approach, a tourism region represents a territory within an extensive area, where tourism activities are constantly developed, having a considerable influence over the territory's economic and social development (Stănciulescu et al., 1998).

Considering the European Union (EU) integration process, for the first time since 1989, in Romania was adopted the Law No. 151/1998 regarding the regional development, creating eight territorial regions and, at the same time were introduced concepts like "region" or "regional development", a regulation supplemented subsequently with the provisions of the Law No. 315/2004. According to the GEO No. 58/1998 regarding the organization and development of tourism activities in Romania, article 2 explains the basic tourism terminology, but does not provide a proper description, nor definition of the concept subject to the present paragraph analysis.

A **tourist attraction** defines more the emotional side of the variety of elements composing tourism potential (Glăvan, 2006), referring, especially to what requires the full attention of people and produces highly intensive, aesthetic or even cognitive impressions (Cocean et al, 2005) as the beach, mountain, historical land, festival, trip or various sports competitions (Stănciulescu et al., 1998). In this case, might be as well elements of a pre-existing landscape endowed with attributes of attractiveness (Cocean, 1996), directly influencing certain segments of the tourism demand (Câdea et al., 2012). The tourist attraction considered by some authors identical to the tourism resource (if they benefit from a series of arrangements meant to introduce them in the touristic circuit and to promote them on a commercial approach), represents the basis for tourism development (Cocean et al., 2005). Cocean (2014) divides these tourist attractions into two main categories: primary and secondary. The cultural-historical, technical-economic and even some of the natural components - landscape, places, plants, animals, can be designated as tourist attractions (Erdeli ed., 1999, Glăvan, 2010). Alongside transport, accommodation and leisure, they are the essential elements of the tourism product (Stăncioiu, 1999).

The legislation in force does not insist on defining the concept of tourist attraction, but in accordance to article 2 from GEO No. 58/1998, the national concept of tourism *objective* is defined as a constituent element of the tourist resource, individualized and introduced in the tourist circuit. In other words, the legislation defines the tourist attraction by the means of the tourist objective, having basically the same meaning.

The concept of **tourism resources** speaks for all the attractive elements of a territory, regardless of their origin and their conjunction. It is one of the basic categories of tourism geography, representing the basis for the tourism phenomenon emergence and development, being its raw material, as in a basic input. There are two major groups of attractions that make up the tourism fund (meaning tourist resources), namely: those belonging to the natural environment (landform, climate, hydrography, vegetation, fauna, and lithological structures) and those of anthropic origin (historical vestiges, religious temples, museums, ethnography, etc.) (Cocean et al., 2005).

Our domestic literature and researches illustrate several concepts used to designate the tourism resources. Cocean et al., (2005) adopt more the concept of attractive resource than the tourist fund. While the notion of tourist fund includes also elements of infrastructure (Cocean, 1996), the term attractive resource invariably refers only to pre-existing landscape elements, endowed with the attribute of attractiveness.

The concept of tourism resources, which can be either natural or anthropic (Erdeli ed. 1999) is much more complex and complete, including, in addition to the tourist attractions suitable for visiting, natural or anthropic elements that can be used directly in tourism activities as "raw material".

Stricto sensu, economists consider tourism resources, as a sum of natural and anthropic elements embedded with tourist interest, which can be exploited in the process of tourist activity (Minciu, 2004). Economists state that, unlike tourist attractions, natural resources are perceived more as raw materials for the economic activity, respectively for tourism production (Stănciulescu et al., 1998). Lato sensu, besides the natural and anthropic elements, other additional resources, such as human capital, are considered resources (Minciu, 2004).

According to article 2 from GEO No. 58/1998 by tourism resources the legislator retains all the components of natural and anthropic environment, which according to their characteristics and specificity are recognized, registered and valorized by tourism, insofar as they are not subject to a comprehensive protection regime.

Tourism heritage (patrimony) represents a set of natural, social, economic, cultural elements, but also the sum of all facilities (communication lines, base of accommodation, treatment, meal, amenities for entertainment and instruction, etc.), specially designed for a territory's tourism activities (city, county, region, country, etc.) (Ielenicz and Comănescu, 2006). Tourism heritage represents the fundamental factor for tourism offer and consists of public and private goods, capitalized and protected under the law (GEO No. 58/1998). It represents the whole of the tourism resources and the structures realized for their valorization through tourism activities (Câdea et al., 2012).

The tourism heritage remains at a stage of tourism potential or natural and /or anthropic tourism resource if it is not augmented via new tourist settlements (Câdea et al., 2012).

From an economic point of view, the tourism patrimony represents the equivalent to the concept of tourist offer, understood on an extensive sense (Minciu, 2004). In extenso, Stănciulescu et al., (1998) illustrated the tourism patrimony as a synonym for tourism potential, being considered a potential tourist offer.

Considering the Romania's Civil Code provisions (article 31), any individual or legal entity owns a patrimony that includes rights and obligations that can be valued in money. Thus, while the Civil Code talks about a sum of legal rights and obligations with pecuniary value belonging to a subject of law, the tourism heritage, according to GEO No. 58/1998 is defined as an aggregation of tourism resources and other structures created for the purpose of promoting tourism activities. Therefore, GEO No. 58/1998 makes a specific reference to the active side of a patrimony which includes civil rights with economic value, such as the property right (ownership) and its dismantling rights. According to Article 3, a tourism heritage (patrimony) is made up of public and private property and is severally protected by the rules of law. The legislator insists on the valorification of tourism heritage that can only be developed within the context of the Tourism Development Master-Plan (2007-2026). Emphasizing tourism's heritage legal acceptance, in order to protect and implement a process of sustainable exploitation of local tourism, certain settlements, areas or even resorts will be declared protected areas, or, they will be conserved according to the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage (UNESCO, 1972), by which the signatory states designate them as having "outstanding universal value", committing to ensure their undeniable protection.

The tourism potential results from the spatial association of the tourist fund on the related technical-material basis. It is an indicator of maximum importance, being synonymous with the concept of tourist offer (Coccean, 2005). The tourism potential includes, besides the tourist fund, the technical- public facilities and the tourism services. Neguț (2003) considers the tourism potential synonymous to the tourist fund. The tourism potential comprises all the natural and anthropic elements of a territory that stimulate tourists' interest leading to the creation of touristic settlements for visiting and leisure activities (Minciu, 2004). The foreign literature often defines the tourism potential as the tourism destination (Ielenicz and Comănescu, 2006).

Tourism potential was explained by the United Nation World Tourism Organization (UNWTO) and EU institutions as being a convergence between natural, cultural and socio-economic components that offer possibilities of touristic valorization and provide a specific territorial functionality, having an indispensable role in tourism activities development (Cândea et al., 2012). Moreover, the tourism potential of a given territory or resort, is defined as a set of natural, cultural, historical, socio-demographic with technical and economic components, scientifically recognized both on a quantitative and qualitative basis and presenting various possibilities and functionalities for tourism (Erdeli ed., 1999, Glăvan, 2006).

According to economists, the tourism potential is synonymous to the tourism heritage (patrimony), representing all the natural, anthropic, cultural-historical resources that, together alongside infrastructure, constitute the tourist offer of a destination (Stăncioiu, 1999).

Conclusions

Over the past five decades, the increasing volume and complexity of tourism offer has led to the development of a prolific tourism industry, which justifies treating the tourism phenomenon as a distinct and significant branch of national economy development, and, by all means, of the tertiary sector. According to its nature, this phenomenon has proved to be extremely complex, with geographical, social, cultural, legal and economic implications. Considering the fact that, unlike other service sectors, the tourism industry represents a branch whose development is closely correlated with other branches and domains, we have decided to perform our research considering the geographical, economical and legal approaches and implications.

While the economic and geographic approach have encountered many similarities regarding definitions and contents, the legal approach has either proved to be inadequate in accordance to our subject of study, or has briefly presented the legal implications of concepts already extensively investigated in Romania's literature.

From both a geographic and economic point of view, a tourism region represents a large territory, structured according to legal provisions, in geographical units specific to our country, where the main performed activity is tourism and other related activities. Our current legislation does not refer to the concept of tourism region but details definitions and purposes of an administrative-territorial region.

The tourist attraction is usually perceived by geographers as a concept that illustrates elements of tourism potential which have a considerable impact over tourists perception, referring, in general, to natural elements such as the beach, mountains or historical lands, while economists conclude the definition by adding anthropic, but business-oriented elements such as transportation, accommodation or other additional services as part of the final product provided to possible clients. The Romanian legal provision does not explain the concept of tourist attraction, but, it refers to an "objective", having the same meaning as provided by economists.

Tourism resources partially consist in natural resources, elements which exclusively define the geographical environment. Adding the economic practice and approach, we realized that tourism resources are considered social-economic activities by which resources acquire new meanings, especially from a business perspective. Geographers consider two main types of resources: natural and anthropic, but economists added the element of tourist interest considering that those resources could be perceived as input for the process of tourism production. Also, they emphasized the impact of human resources implication over the entire process of producing and consuming a tourism product. Our national legislation reiterates the information mentioned above by highlighting the importance of tourism valorification, in accordance to the local provisions. Hence, the legislator seeks to induce the

idea of legal accountability or responsibility within the process of production and consumption of tourism products.

The concept of tourism heritage (patrimony), according to geographers represents a set of natural, social, economic and cultural elements, but also the sum of additional elements that facilitates the consumption of tourism products, specially designed for a territory's tourism activities. As legal provisions suggest, tourism patrimony represents the ground for tourism offer, an element that consists both in public and private goods, illustrated and protected under the rules of law. On the other hand, economists illustrate tourism patrimony as in tourist offer, or even in tourism potential. The natural, anthropic and additional elements get a unique relevance while being used in the process of creating new tourism products. Hence, while the geographic approach is mostly focused on natural and man-made attractions, the legal and economic approaches add the infrastructure, accommodation, transportation and other elements considered essential to the material and infrastructure base, in order to facilitate tourists activities.

The final analyzed concept, tourism potential, comprises mostly all the natural and anthropic elements of a territory that stimulate tourists' interest, being often confused with tourism destination. On the other hand, economists usually agree upon the fact that this concept represents in fact the tourism patrimony illustrated above.

The purpose of the research was to clarify, for further deep analysis or scientific debates, the national meaning from a geographical, economic and legal perspective of certain tourism concepts, rather than to enforce the international approach of those meanings. Therefore, the items depicted in the present study represent rather a sample of concepts. Finally, considering that the paper was informed and expanded based on existing sources, it also reflects the authors' opinions.

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CROSSING THE CHASM FROM DIVERGENCE TO CONVERGENCE IN AN ENLARGED EUROPEAN UNION

Dumitru Miron¹ and Ana-Maria Holobiuc²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: dumitru.miron@rei.ase.ro; E-mail: anamaria_holobiuc@yahoo.com

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Abstract

European Union is still considered a unique economic and political actor that has challenged the principles of economic integration in the last half a century. With the advancement of the integration process and the accession of the countries from Central and Eastern Europe, decision makers and academic community have been interested in studying if the desiderate of economic convergence can be achieved in an enlarged European Union. Although initially, researchers focused their attention on countries, it seems that more and more studies aim the evolution of convergence between regions. The main purpose of this paper is to study convergence between regions at NUTS 2 level by taking into consideration two determinants: GDP per capita and disposable income of households. In order to capture the economic landscape of the European Union, we have used the neoclassical growth model concepts – σ - and β -convergence – and we have structured the regions depending on the geographic location in three main clusters: North-Western, Southern and Central and Eastern Europe. The results of our paper suggest that the regions from Central and Eastern Europe experienced a significant speed of catching up in terms of GDP per capita and households' disposable income between 2000 and 2016. In contrast, the regions from North-Western and Southern Europe recorded modest economic performances. Overall, the results of our research suggest that although the objective of convergence has not been achieved so far, the Central and Eastern European regions have been made significant progress in terms of catching up.

Keywords

Real convergence, European Union, NUTS 2 statistical regions, σ -convergence, β -convergence

JEL Classification

O11, O40, R11

Introduction

The European Union has represented a unique economic and political actor that was established in the second half of the last century as custom union and which sharply advanced until today to the stage economic and monetary union. Although at the beginning, the European Economic Community consisted only of six countries, it has sooner expanded until it encompassed the majority of the states from the European continent. The enlargement with the countries from Central and Eastern Europe has created both costs and benefits for the European Union, mainly in the field of convergence. In this respect, one of the most debated topic in the Academic forums and governmental institutions is referring to the capacity of the new entrants to catch up in terms of economic variables, in order to promote cohesion at Community's level. The main purpose of this paper is to examine convergence between the NUTS 2 statistical regions of the European Union between 2000 and 2016, using the models popularized by the neoclassical growth theory: β - and σ -convergence. In order to test the convergence hypotheses, we have taken into consideration two main determinants – GDP per capita and disposable income of households, by dividing the regions depending on the geographic location in three main groups: regions from North-Western, Southern and Central and Eastern Europe.

Literature Review

The enlargement process that started in the early '70s and continued in 2000s has created both challenges and opportunities for the European Union. On the one hand, some voices argued that the advancement of the integration process would create a stronger position of the European Union in the global economic and political landscape. On the other hand, there were also spectators of the process of regional integration that considered that the influence of the European Union would be threatened with the accession of the developing countries from Central and Eastern Europe. Nowadays, one cannot say if the advocates or the opponents were right. However, one of the main challenge for the European Union in the 21st century is to ensure a sustainable level of convergence. Although in the early stages of the integration process, analysts were interested in studying the economic convergence between nations, they recently shifted their attention to the regional dimension.

Convergence has been studied taking into consideration different facets. Artelaris et al. (2010), Neven and Gouyette (1995), Geppert and Stephan (2005) and Goecke and Hüther (2016) have studied income convergence. Geppert and Stephan (2005) found evidences in favour of convergence between EU (15), but rejected the absolute convergence hypothesis for regions. Geppert and Stephan concluded that divergences still persist as the capital regions have continuously improved their position due to the agglomeration forces that attract high-value activities in these geographic locations.

From another point of view, Ritzberger Grünwald and Schreiner (2018) studied convergence in the New Member States from Central and Eastern Europe, concluding that the accession to the European Union had a defining role in improving the economic determinants and strengthening the political and social environments. However, despite the remarkable economic growth recorded during the transition period and after the accession, the goal of convergence has not been achieved so far. In spite of the progress experienced at national level, Artelaris et al. (2010) demonstrated that the gaps between regions in Central and Eastern Europe have expanded after the collapse of the communist regime in '90.

Moreover, other researchers focused their attention on macroeconomic indicators, such as labour productivity (Martino, 2015), compensation of employees (Naz et. al, 2017) or a mix of economic determinants (Niebuhr and Stiller; 2004). Analysts such as Canova (2004) were interested to find

evidences in favour of club convergence, while Del Campo et al. (2008) studied the possibilities of clustering the NUTS 2 statistical regions, taking into consideration four socio-economic criteria (demography, economy, employment rate and education).

Methodology and Results

The main purpose of this paper is to study convergence at regional level, taking into consideration two macroeconomic determinants - the GDP per capita and the disposable income of households - in the NUTS 2 regions between 2000 and 2016. In this respect, we have tested the hypotheses of the neoclassical growth model, which were elaborated by Solow (1956). On the one hand, β -convergence implies that the poorer regions grow faster than the developed ones. On the other hand, σ -convergence illustrates if the catching up process is accompanied by the reduction of dispersion between regions. We have structured the NUTS 2 regions depending on the geographic location in 3 three main clusters: North-Western, Southern and Central and Eastern Europe.

Figure no. 1 illustrates the average growth rate experienced by the regions at NUTS 2 level between 2000 and 2016. According to our calculations, the regions from Romania experienced the highest catching up speed between 2000 and 2016: Bucuresti – Ilfov (10.65%), Nord-Vest (10.4%), Vest (10.36%), Sud-Muntenia (10%), Sud-Est (9.85%), Centru (9.56%), Sud-Vest Oltenia (9.27%) and Nord-Est (9.18%). Other regions from Central and Eastern Europe recorded significant GDP growth rates: Yugozapaden (9.9%), Bratislavský kraj (9%), Eesti (8.6%), Yuzhen tsentralen (8.36%), Západné Slovensko (8.26%), Latvija (8.25%) and Stredné Slovensko (8.14%). The regions from North Western Europe recorded average GDP growth rates, ranging between 6.12% (Southern Ireland) and 0.1% (Outer London-South). As far as the Southern cluster is concerned, the results of β -convergence model suggest that the catching up speed was between 4.45% (Malta) and 0.26% (Stereia Ellada). To sum up, we found evidences in favor of the β -convergence hypothesis as poorer regions from the European Union experienced higher GDP growth rates than the developed ones.

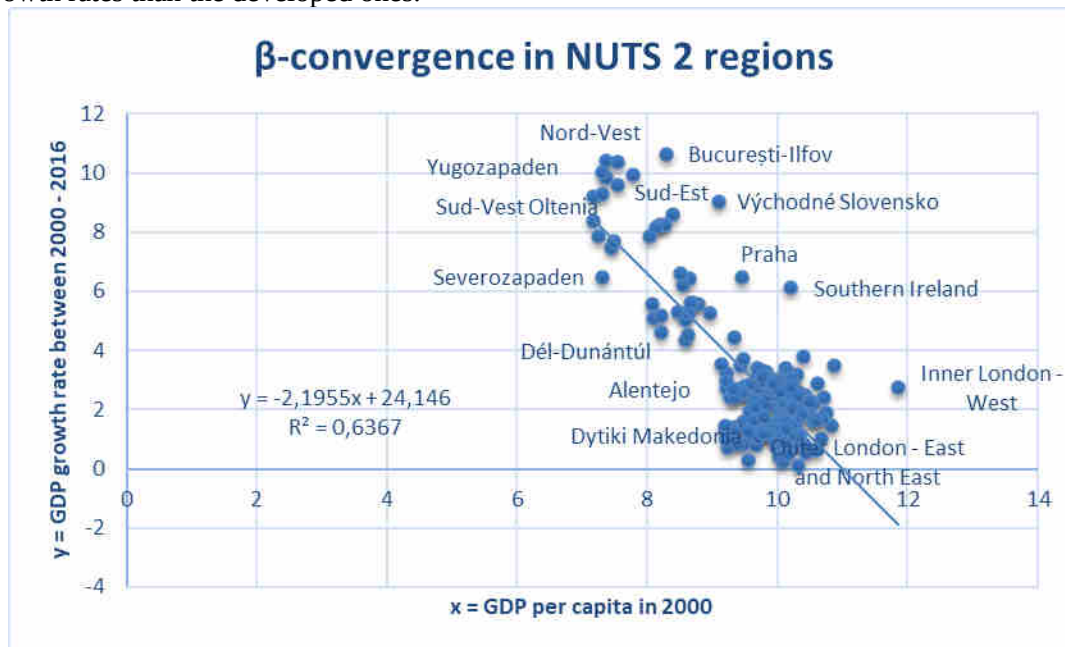


Fig. no. 1 β -convergence in regions at NUTS 2 based on GDP per capita (2000 – 2016)

Source: Authors' processing based on data provided by Eurostat

In order to examine if the catching up process of the poorer countries was accompanied by a decrease of discrepancies between regions, we have tested σ -convergence hypothesis. In this respect, Figure no. 2 illustrates the evolution of the coefficient of variation between 2000 and 2016. The income gaps between North-Western European regions increased with almost 7%, while in Southern Europe with 19%. In the Central and Eastern Europe, the divergences between regions slightly decreased with 8%. Within this group, the regions outside the Euro Area recorded a higher speed of convergence than the regions which are part of countries that have adopted the single European currency. Consequently, the coefficient of variation decreased with 12% in case of the former and with 2% for the latter. Overall, we have found evidences in favor of the σ -convergence hypothesis for Central and Eastern European regions.

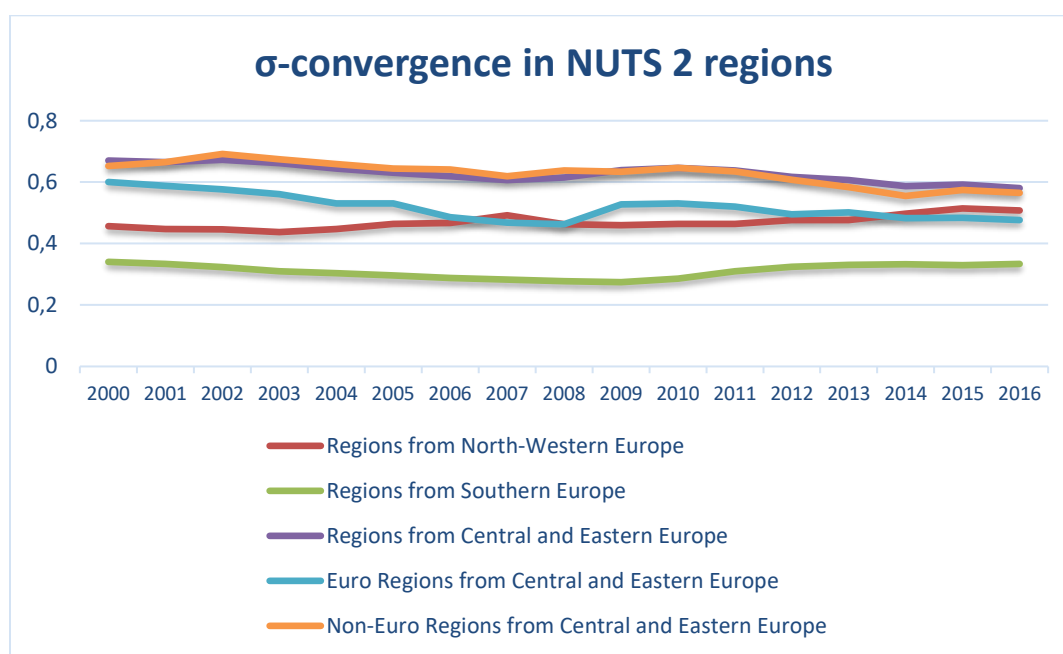


Fig. no. 2 σ -convergence in regions at NUTS 2 based on GDP per capita (2000 – 2016)

Source: Authors' processing based on data provided by Eurostat

Figure no. 3 illustrates the performances of the NUTS 2 regions in terms of catching up of households' disposable income between 2000 and 2016. The most impressive growth rates of the household's disposable income were recorded, as in the case of GDP per capita, by the regions from Central and Eastern Europe. The leader in terms of catching-up were the Romanian NUTS 2 regions, namely: Bucuresti-Ilfov (11.7%), Sud, Centru, Nord-Vest and Vest (9%), Sud-Muntenia (8.87%) and Sud-Est (8.4%). Moreover, in the regions Yugozapaden (Bulgaria) and Bratislavský kraj (Slovakia) the disposable income of households significantly increased during the analyzed period with 9.5% and respectively, with 8.3%. Income catching up was also experienced by the regions from Estonia – Eesti (8.2%), Slovakia - Stredné Slovensko and Západné Slovensko (8%) and Letonia – Latvija (7.8%). Consequently, the catching-up speed was higher in the capital regions than in the peripheral ones. The regions from North-Western Europe

recorded average income growth rates ranging between 0.2% (West Midlands - United Kingdom) and 3.6% (Southern Ireland). In contrast, the Southern regions recorded modest economic performances, and even negative growth: Sterea Ellada (-1.3%) and Dytiki Makedonia (-1.4%). Overall, we found evidences in favor of the β -convergence hypothesis, as the poorer regions from Central and Eastern Europe recorded higher households' disposable income growth rates than the developed ones. Moreover, the growth in GDP per capita in Central and Eastern Europe was accompanied by the increase of disposable income of households.

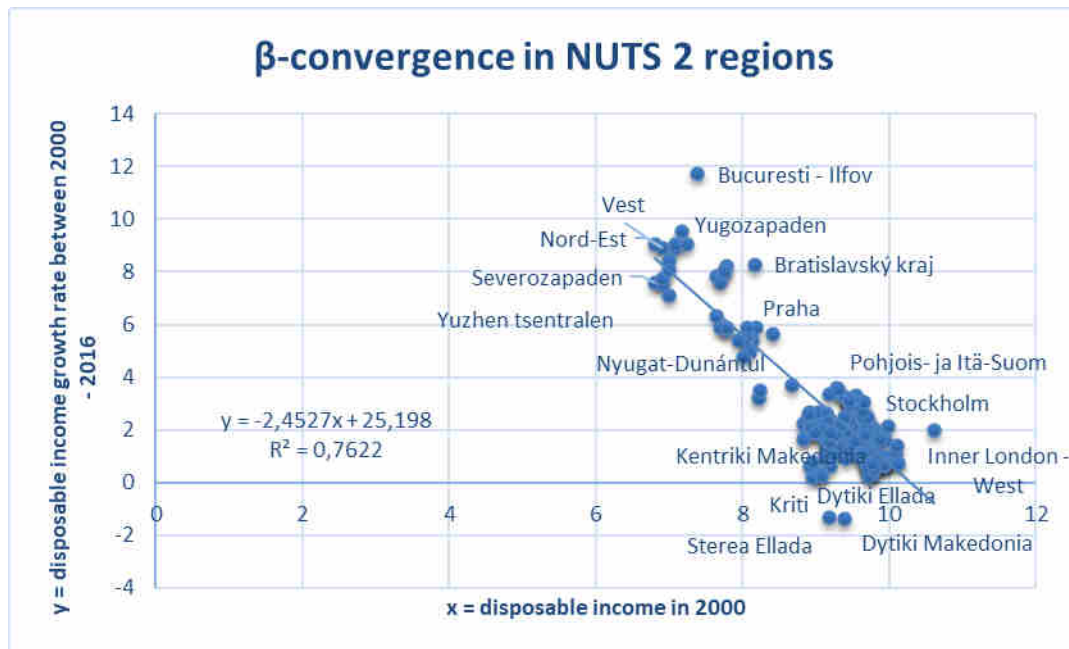


Fig. no. 3 β -convergence in regions at NUTS 2 based on households' disposable income (2000 – 2016)

Source: Authors' processing based on data provided by Eurostat

Figure no. 4 depicts the σ -convergence of the NUTS 2 regions between 2000 and 2016 for three cluster of regions: from North-Western, Southern and Central and Eastern Europe. We have also structured the Central and Eastern Europe in two sub-groups in order to study if the adoption of the single currency enhanced convergence. According to our calculations, the gaps in terms of households' disposable income diminished in North-Western regions with 15%. In the Southern regions, the discrepancies in households' disposable income slightly decreased during the analyzed period with 4%. In contrast, in Central and Eastern Europe, the income gaps reduced with almost 35% between 2000 and 2016. The regions from the Central and Eastern Countries included in the Euro Area recorded even a faster speed of convergence, as the discrepancies decreased with more than 60%. In contrast, in the regions from the countries that have not still adopted the single currency, the coefficient of variation decreased with 32%. To sum up, we found evidences in favor of the σ -convergence for all the regions established at NUTS 2 level. It seems

that between 2000 and 2016, the most significant speed of catching up was experienced by the regions from Euro Central and Eastern European countries.

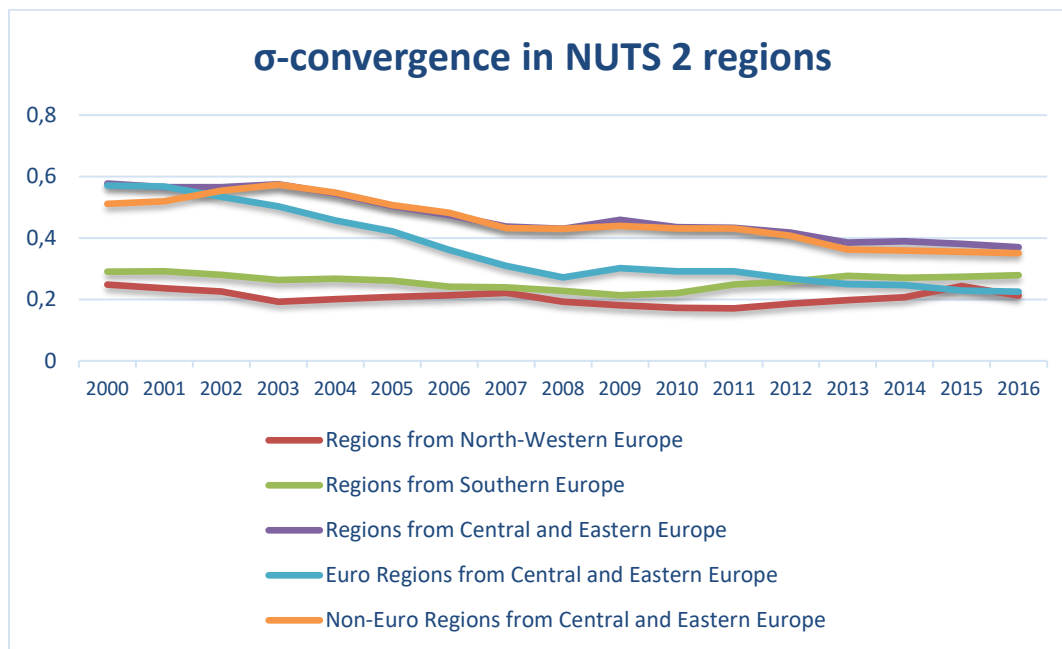


Fig. no. 4 σ -convergence in regions at NUTS 2 based on disposable income of households (2000 – 2016)

Source: Authors' processing based on data provided by Eurostat

Conclusions

In conclusion, the main purpose of this paper was to study real convergence in the European Union, by taking into consideration the evolution of GDP per capita and disposable income of household between 2000 and 2016. In order to examine if the regions are catching up or in contrast, are diverging, we have used the neoclassical growth model concepts, σ - and β -convergence for a panel comprising the regions established at NUTS 2 level. We have structured the regions from European Union in three clusters, based on geographic location: North-Western, Southern and Central and Eastern Europe. The results of our study suggest that Central and Eastern European regions from NUTS 2 level are making important steps in terms of convergence. The highest catching up speed both in terms of GDP per capita and disposable income was recorded in the regions from Romania. Overall, our study suggests that the convergence process will continue in the Central and Eastern Europe regions and that the growth in GDP per capita will be accompanied by the improvement of the households' disposable income. However, the goal of convergence has not been achieved so far at Community's level and the trends between geographical regions are still divergent. While the Central and Eastern European cluster is making important steps in terms of convergence, the growth rates in North-Western and Southern Europe remain modest.

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SUSTAINABLE CROSS – CULTURAL BUSINESS BETWEEN ROMANIA & JAPAN IN THE AUTOMOTIVE INDUSTRY

Cristina Veith¹

¹⁾ *The Bucharest University of Economic Studies, Romania*

E-mail: cristina.veith@fabiz.ase.ro

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Abstract

The impact of cultural differences between Romanians and Japanese in the Romanian automotive industry was analyzed in order to determine the main factors on which the success or failure of such collaborations depends. The present study shows that in most cases of business misunderstandings and difficult communication inside the companies or with partners, the main determinants were of an intercultural nature. The research method used is that of the interview. The structure and content of the interviews were based on the results of a secondary research of the cross-cultural management materials. The interviews were conducted both with the decision makers within the companies, who directly negotiated a deal with partners from the other culture, but also with employees located at different hierarchical levels within the companies. The real-life situations reveal that concrete and correct misunderstanding of the mentality and business principles of the partner can be defining for the good running of the business. The cultural dimensions theory of Hofstede represented the theoretical basis for the analysis carried out. Comparing the Romanian approach with the Japanese one, it was clear that it is much easier for a Japanese company to do business in Romania than for a Romanian company in Japan. Even in the case of businesses run by Japanese companies in Romania, the demands for adaptation to cultural differences are higher for Romanian partners. Openness and the availability of adaptation proved higher on the Romanian side. The study is limited to an analysis conducted in the Romanian automotive industry.

Keywords

Cross - Cultural - Business, Romanian culture, Sustainability, Japanese culture, Business – Model, communication, development opportunities.

JEL Classification

F23, M14, M16, L29, L62

Introduction: General information about the two countries: Romania and Japan

The goal of the study is to investigate the factors which influence the success from an intercultural business standpoint and if and how communication and business relationships can be affected by Cross-Cultural Differences.

Globalization makes the business world more homogenous over time. Even in this situation, cultures may still pose barriers between countries. Hofstede explains that the cultural dimensions are very important for international business (Hofstede and Minkov, 2010). Therefore, they highlight that cultural dimensions play an important role in international business. From the planning stage, a new business relationship is important to choose the correct entry mode, after collecting and evaluating the possible cultural problems and differences between the two cultures involved (Trompenaars and Hampden-Turner, 2011).

Every investment in another country needs a special strategy. The success could be affected by the attitude of the employees that are bound to traditions and beliefs. Some companies corporate culture is strongly related to the idea, that things are done right only in their own way. They will not be open to other possibilities or innovation strategies from outside (Yamazaki, K. et. al., 2012).

These aspects are more important today, because according to political discussions, Romania and Japan are developing their economical relationships. According to ONRC (Oficiul National al Registrului Comertului) Japan is on the 25th place in the list of countries which invested in Romania. At ONRC there are 358 registered companies with Japanese capital (CCIR, 2018). This number does not include the Japanese investment which comes from Japanese companies that already established in other parts of the EU. This means that the biggest Japanese holdings in the Romanian market are not included in this list.

An economic opportunity for both countries

Japan is the world's third largest automobile manufacturing country and has the largest electronics goods industry. Japan is often ranked among the world's most innovative countries. The Bank of Japan (BoJ) expects an economic growth between 1.3% and 1.5% in the 2018 fiscal year (FOCUS, 2018). The global commercial real estate transaction volume decreased with 3.2% to US\$ 231 billion in the second quarter of 2018 (CBRE, 2018).

Romania is part of the European Union single market. Our country is a fast developing and a high-income mixed economy with a very high Human Development Index and a skilled labor force. Romania's monthly exports averaged 2150.25 EUR Million from 1991 until 2018, reaching an all-time high of 6106.60 EUR Million in March of 2018 and a record low of 143.20 EUR Million in February of 1991 (Trading Economics, 2018).

Romania is extending the economic relationship with Japan. In July 2018, during a meeting between the president of the Romanian Chamber of Commerce and Industry, Mr. Daraban and the executive vice president of Jetri Tokyo (Japan's Foreign Trade Organization), Mr. Yasukazu Irino, they discussed important issues regarding Japanese investments in the port of Constanta. Constanta port has a key position at the Black Sea and could become an important logistic platform for Japanese products for the Romanian and European market (CCIR, 2018). The meeting represented the second important step, at a governmental level, after the meeting of July 2017 between the President of Romania, Mr. Klaus Iohannis, and Japan's State Minister for Foreign Affairs, Mr. Nobuo Kishi. During the meeting both countries expressed their intention to strengthen and intensify their relationship. The Romanian side "encouraged new Japanese investment in Romania. They showed that the Romanian's economy has a high potential, including by capitalizing on enhanced opportunities of economic cooperation. Romania is open to new relations with Japan following the completion of the negotiations of the EU-Japan Agreement of Economic Partnership and the Agreement of Strategic Partnership at the EU-Japan Summit of July 6"

(AGERPRESS, 2018). The Japanese side expressed their orientation and interests for Romania regarding the Brexit situation (Brenovici, 2017).

The third important event regarding the Romanian – Japanese relations was in July 2018 at the conference „Romania and the Japan-EU EPA”. This conference was organized by the Romanian Institute for Asia-Pacific Studies (RISAP). The conference took place in the context of the signing of the Economic Partnership Agreement (EPA) between Japan and the European Union. “This free trade agreement (FTA) is the European Union’s largest FTA to date and it will have a considerable impact on trade and investment flows between Europe and Japan” (Cocei, 2018). This agreement opens not only the possibility for further Japanese investments in Romania, but also for Romanian exports to Japan.

In July 2019, a visit of a Romanian delegation to Japan took place. At this occasion, the start of a major new Japanese investment in Romania was discussed, as well as the start of joint initiatives in the fields of start-ups, IT and automotive. The representatives of the Japanese corporation JTEKT announced the expansion of the operations and production facilities from Koyo Seiko Romania (formerly Alexandria Bearings company) for the production of specialized car components needed for Toyota Motors factories in the Czech Republic.

In 2018, bilateral trade totaled USD 709.7 million, of which Romanian exports amounted to USD 296.1 million, and imports USD 413.6 million. The main Romanian products exported to Japan: wood and wood semi-finished goods, clothing and accessories, electrical machinery and equipment, chemicals, metallurgical products, glass, ceramics, wines, honey, cosmetics. The main Japanese products imported into Romania: transportation equipment, electrical equipment, machinery and equipment, metal products, chemicals, optical and photographic instruments (Cicovschi, 2019).

More than 40.000 Romanian employees work in the Japanese companies that invested in Romania. The main sector is automotive, but the other sectors are also developing. One example is the IT sector and here NTT Data is planning to employ until 2020 up to 3.500 people (Laur, 2017). Another example of a big Japanese investment in Romania is the electric motors manufacturer Nidec Corporation which was founded in Kyoto, Japan in 1973. Currently, it operates in over 40 countries through approximately 300 companies with 110,000 employees. 2013 Nidec invested indirectly in Crevedia, Dambovita, and opened Nidec ASI Ro. In 2016 the group bought 94.8% of ANA IMEP, a manufacturer of electric motors for washing and drying machines. In 2018 Nidec invested in Arges County in a new electric motor company, employed 500 people and it plans to extend this number to double in the next two years (Banila, 2018).

Traditionally Romania had very good relations with Japan. The first diplomatic contact is dated to 1902, “when the Envoys Extraordinary of the two countries held in Vienna an informal consultation for establishing diplomatic relations” (MOFA, 2016).

The first Romania legation in Tokyo is dated to 1921, while Japan established its legation in Bucharest in 1922 (MOFA, 2016). The economic relations between the two countries developed rapidly after 1991. The Economic Partnership Agreement (EPA) gives Romanian companies a very good chance to increase their export to Japan. According to this agreement, 99% of the taxes on EU’s exports to Japan will be reduced and the creation of a free trade area of 600 million consumers will be opened (Romania Insider, 2018). Romanian companies can benefit from the removal of Japanese import taxes on agricultural products from the EU, such as cheese and wine. As mentioned, not all the Japanese companies in Romania came as a direct investment. That is why not so many well-known Japanese names are on the list from ONRC (JETRO, 2018). In the past years, Japanese companies were and still are also involved in major funding projects in Romania (CCIRJ, 2018).

Comparing the Romanian approach to the Japanese

In order to carry out the research, elements from the scientific literature were combined with the results of the primary qualitative research, achieved through the interview. The interview consisted of two parts. The first seven questions were related to the field of activity, age, occupation, professional experience and international professional experience of the respondents, and the second part (questions 8 - 14) to their experience in the Romania - Japan relationship.

The result of the interview from each individual respondent was carefully read two / three times and the essentials were marked for each individual question. Three main ideas were extracted from each interview, which were noted separately. The answers of the interviewees were analyzed by summing all the answers in a category to each question, starting with question eight. From each answer I retained only the essential elements for the proposed analysis. From all the essential elements paraphrases were formed, from which categories were created. After the formation of the categories I applied for each question: frequency analysis (for different characteristics), valence analysis (positive, negative, neutral towards a subject or a person), intensity analysis and contingency analysis. Based on the results obtained, the results of the interview with the 27 professionals were formulated.

The main questions were: Did you ever get any form of training for working together with different cultures? If yes, please describe your experience; What did you expect from the professional relationship with the Japanese / Romanian people? Describe your experience with the Japanese / Romanian people. What were the main problems? What were the pleasant surprises? What would it really take to stop these problems from happening again?; What was the relationship with the manager / direct partner?; What did you learn from your professional relationship with the Japanese / Romanians?.

Comparing Japan and Romania according to Gert Hofstede's Cultural Dimensions we find a lot of differences, starting with power distance, masculinity, until long term orientation.

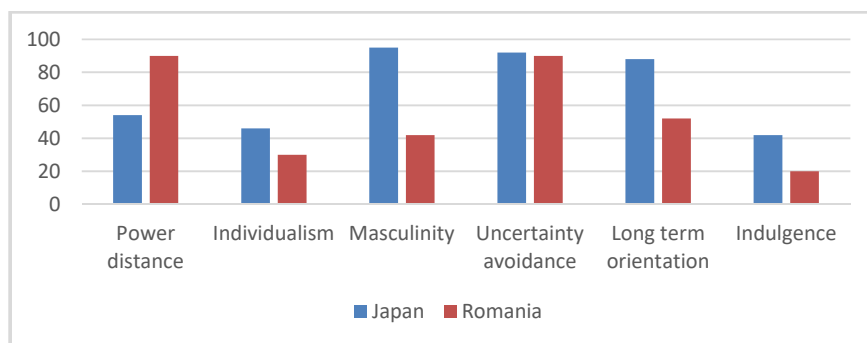


Fig. no. 1 Hofstede Cultural Dimensions for Japan and Romania

Source: Hofstede Insight, 2018, Country Comparison. From Hofstede Insight: <https://www.hofstede-insights.com/country-comparison/japan,romania/>

With a score of 54, Japan is a borderline hierarchical society. Even if we had the impression that Japan would be highly hierarchical, this is not true. Hofstede said, "Japanese are always conscious of their hierarchical position in any social setting and act accordingly" (Hofstede Insight, 2018). Our impression, that Japan would be highly hierarchical is related to the fact that they have a very slow decision-making process in business. According to the Japanese rules, all decisions must be confirmed by each hierarchical layer and finally by the top management in Tokyo. Exactly this fact means that nobody takes decisions alone. In Japanese society there is no one top person who can take decision alone, like in more hierarchical societies. All persons involved in the process must confirm all decisions. Japan has always

been a meritocratic society. All the children learn in school, that everybody is born equal and is up to people what they learn and how hard they work to achieve a certain position.

Japan cannot be compared, regarding to power distance, to other Asian countries which are very hierarchical.

Romania has a score of 90 for power distance. Even if generally everybody talks bad about their boss, Romanians accept a hierarchical order. In this hierarchy, everybody has a fixed place and this needs no further justification. We have the feeling that hierarchy in an organization is as reflecting inherent inequalities. People are not ready to take decisions and subordinates expect to be told what to do. For a long period, all the important happenings took place only in Bucharest and were related to the decision of one person. Centralization is very popular in our country. If the employee does not agree with his boss, about what needs to be done, the employee will just answer: "It's impossible to be done". Most employees do not try to find a solution, according to their experience and they are afraid of responsibilities and decision-making. According to this kind of thinking the best boss is benevolent autocrat (Hofstede Insight, 2018).

According to Hofstede definition for "Masculine", it indicates in this dimension a society driven by competition, achievement and success. Success is defined here by being the winner / the best in the field. This value system starts with the education at home, then mainly in school and continues throughout organizational life. Opposed to this, a Feminine society has as dominant values: carrying for others and the quality of life. In a Feminine society we understand success to be the quality of life. To be number one is not the goal (Hofstede and Minkov, 2010). At 95, Japan is one of the most Masculine societies in the world. However, in combination with their mild collectivism, you do not see assertive and competitive individual behaviors which we often associate with Masculine culture. What you see is a severe competition between groups. From very young age in kindergarten, children learn to compete on sports day for their groups (traditionally red team against white team) (Hofstede and Minkov, 2010). In corporate Japan, you see that employees are mostly motivated when they are fighting for a winning team against their competitors. What you also see as an expression of Masculinity in Japan is the drive for excellence and perfection in material production (monodukuri), in material services (hotels and restaurants) and presentation (gift wrapping and food presentation) in every aspect of life. Notorious Japanese workaholism is another expression of their Masculinity. It is still hard for women to climb up the corporate ladder in Japan with the Masculine norm of hard and long working hours (Hofstede Insight, 2018).

As we know, every country developed its own specific management according to its vision and culture for facing the very competitive environment. The Japanese management is one of the most studied management styles, this resulting from their economic success. The Japanese people are known as hard-working, efficient, serious and disciplined (Veres, Marian, and Moica, 2017). According to Professor Saini, there are discussions that Japanese companies are facing intercultural problems in employee relations management at different branches abroad. This happens because they are ethnocentric abroad. The host country has to follow what the Japanese managers decide (Saini, 2017). Some of the answers from the interview present exactly this situation. This happened not only at the level of employees in Japanese branches in Romania, but also with Romanian business partner, where the negotiation went from the Japanese side, like this: "My way or the highway". In many situations, we find Japanese expatriates as branch managers. Because of this, many misunderstandings and cultural clashes occur. On top of this, the Japanese "foreigner complex" has an important effect on intercultural communication. The miscommunication with foreigners leads to difficulties and unpleasant experiences (Esposito and Verma, 2017). This was one of the main problems expressed by the interview participants. At the beginning of the relationship it was difficult to understand and to accept the Japanese way of communication and negotiation.

An important issue in cross cultural management is the psychic distance. This is defined by differences in regulations, political systems, language and traditions, which influence the communication between the companies and the new market. If the psychical distance is big, then more preparation for a market entry is needed. The psychical distance is not an objective concept, it's only an important perception in the mind of an individual, which takes a specific decision (Stolba, 2009). In this segment, Japanese people had many problems understanding how Romanian public institutions are working.

Depending on the existing cultural differences, the expectations of business people are expressed differently. Business behavior and etiquette are aspects that show considerable differences depending on one's cultural background (Ieng, 2013). This was proved by the answers of the interview participants regarding the different expectations on both sides. On the Romanian side expectations were high regarding the Japanese partners in matters related to: efficiency, punctuality, strictness, honesty, adaptability, flexibility i.e. On the other side the Japanese expected from Romanian not to be so flexible, to respect and to accept their traditions and requirements. Traditions, including greetings, specific to the Japanese are considered by our employees, managers and partners in our country to be exaggerated or sometimes unnecessary. Greetings in our country have become a mere formality. Not infrequently, the young generation looks crooked when they see a person who greets the people around him carefully and possibly with a smile on his face. If we see someone greeting an unknown person we immediately label him as coming from the country. In the case of Japan, it is a proof of a complete lack of education and respect for not knowing how to say hello, and not least who and how to say hello first. A person who knows how to greet is a person who cannot be violent and who seeks to establish good relations with those around him (Ciubacan, 2014). Older people receive more respect in Japan, even in companies, because of their experience and have even if not a formal power, for sure an informal one (Veres, Marian and Moica, 2017). Totally different than in Romania, Japanese employees try hard to be "inside" the group and not different from the others (Veres, Marian and Moica, 2017). This is difficult in Romania where young people are in management positions in many companies. Also, a very big difference between the two cultures is the role of women in business. Japanese people had to accept, that Romania is a modern, democratic country, where equal rights between sexes is not only a declaration on paper, but a fact in life.

In the relationship with the manager, Romanian employees had problems to understand the Japanese way of dealing with work. The interview participants explained, that after the intercultural training, for those how had one, it was clear, even understandable. According to the Japanese beliefs, work makes you proud and a member of the group. For Romanian employees, work needs to be done for surviving or for having a better life.

According to the differences in cultures, people act different in the labor market. Romanian are very open to move their home for a better job and a better future. Even if the strength of family ties is high in Romania this does not stop people from taking professional opportunities even abroad. Alesina and Guilano presented the relationship between family ties and the regulation of labor markets. In societies with strong family ties the required mobility of a free labor market can be painful (Alesina and Giuliano, 2014). In the long term this is not a solution for Romanians, because this mobility is not painless.

According to the answers in the interview regarding the needed training, we need to mention that this is nothing new. The training is needed for the whole staff dealing with different cultures. It is mentioned in the scientific literature since 1986 that the training should include skills development, adaptation and performance to overcome the cultural differences (Mendenhall, M. and Oddou, G., 1986). Without an intercultural training, a relationship based on trust cannot be established, which leads to good communication and efficiency in results. Confidence is related to the level of risk that the parties assume in the business relationship.

The higher the level of trust, the better the professional relations, the communication between the parties and, not least, the business performance (Donaldson, B. and O'Toole, T., 2007).

Conclusions

As a first conclusion is that it is much easier for a Japanese company to do business in Romania than for a Romanian company in Japan. This has two reasons: Japanese companies demand adaptation from the locals to their culture and management style and they have very high-quality expectations. This could be offered by Romanian companies, but not with "zero" mistakes. Until now, there was little cross-cultural training provided. For having a trustful and good business relationship, all persons involved need intercultural training. On the Japanese side it is needed to accept the differences regarding the position of women in business and society in Romania. According to the intercultural training, Romanians need to learn and respect the Japanese traditions in this partnership.

This study is limited to a qualitative analyze of mainly Japanese branches in Romania in the auto-motive sector. The study can be extended in order to understand why some companies came with their own organizational structure, which is different from the Romanian working behaviors and dimensions of national culture. The study can be extended to all economic sectors where Japanese investments exist.

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RETHINKING THE IMPACT OF CROWDFUNDERS ON ECONOMIC SUCCESS OF COMPANIES

Peter Konhäusner¹

¹⁾ Babeş-Bolyai University, Romania

E-mail: peter.konhausner@econ.ubbcluj.ro

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Abstract

This article focusses on the possible impact crowdfunders might have on the economic success of a company. A literature review is used to outline the approach, while further research questions for empirical evaluation are presented. Before turning to the potential influence of the crowdfunders, the question of the motivation of stakeholders to become crowdfunders, in other words, their fulfillment of needs through crowdfunding as a starting point of the inclusion of the crowdfunder into the ecosystem of the company is discussed. Maslow's hierarchy of needs is therefore adapted to a stakeholder and, in the next step, crowdfunder approach. Proposing a model of the direct and indirect influence crowdfunders might have, the adapted approaches are integrated in Bruhn's model of economic success of the company. The results can be used to remodel marketing and crowdfunding approaches as well as to develop a better understanding of the importance of this stakeholder group for the business.

Keywords

crowdfunding, crowdfunder, impact, economic success, hierarchy of needs, stakeholders

JEL Classification

D21, G20, G32, L26, M10, M39

Introduction

Besides numerous financing options for a firm (i.e. bank loans, venture capital, regional or national subsidies), crowdfunding is a way to raise money for a company throughout its lifecycle (Lewis and Churchill, 1983). In this paper it should be discussed which needs of a stakeholder are to be met to convert him into a crowdfunder and what the economic benefits of a company are directly and indirectly implicated by having crowdfunders engaged. The literature shows crowdfunding as a way to finance (Kumar et al., 2019) as well as to market (Demiray et al., 2019) firms, products and services, but not much research has been done on the impact of the crowdfunder on the economic success of a company. Moreover, besides

studies about the motivation of crowdfunders and investors (Lin et al., 2014) to engage in a company a generally applicable model of needs for stakeholders and crowdfunders seems to be missing.

The article tries to propose a model, which can be applied in practice for better understanding the crowdfunders needs and their influence. Decision makers are then able to argue in favor of doing a crowdfunding campaign and can, in the aftermath of a campaign, realize synergies with the crowdfunders in a better way. The article is primarily based on literature research and identifies ways to provide empirical studies on both models proposed. After a general introduction about crowdfunding and the correlation of employee as well as customer satisfaction the adaption of the hierarchy of needs to stakeholders and crowdfunders will be discussed. In the context rendered out in this paper three commercial stakeholder groups are identified: the customers, the employees and the crowdfunders. A model for the indirect and direct impact of crowdfunders on the economic success is drafted. A critical reflection as well as practical implications mark the end of the article.

Crowdfunding, impact, employees and customers

Considered being a subcategory of crowdsourcing and introduced by Howe (2006), crowdfunding can be split up in four different categories, namely: donation-, lending-, reward- and equity-based crowdfunding. The basic principle, a crowd of people (many single “crowdfunders”) giving money for a project or venture, is the same for all four, but the types of interaction and transaction vary from category to category (Meyskens and Bird, 2015; Gierczak et al., 2016).

The focus of this article will be set on companies using crowdfunding. Therefore, the following discussion considers the two main crowdfunding categories used by businesses, reward-based crowdfunding as well as equity-based crowdfunding. The main reason for organizations to use crowdfunding is raising funds. It is discussed, if companies use crowdfunding primarily after unsuccessful attempts to raise money from banks, venture capitalists and business angels (Dresner, 2014; Hagedorn and Pinkwart, 2016). This would lead to the conclusion that crowdfunding is primarily used by companies not considered having a high credit standing (Kuti and Madarász, 2014). Companies also use crowdfunding for marketing purposes (Brown et al., 2017). One reason for a reward-based crowdfunding campaign can be preselling, while the product or service is not finalized or produced (Loane et al., 2016). The main idea of equity-based campaigns is to attract the right people to drive the company forward (Leapfunder, 2020). Another reason to do this kind of campaign is to raise brand awareness among stakeholders, primarily among customers and suppliers. The approach of a business raising capital via crowdfunding is often picked up by industry magazines (Moebelkultur, 2018) or local newspapers (Tagkalidou, 2016). Thus, the information about the campaign is reaching an audience new to the business or entrepreneurship. The campaign owners, primarily the managers of the company, have the responsibility to be authentic and act transparent, so the interested, potential crowdfunders can connect on an emotional as well as on a cognitive level. This is a similarity to influencer marketing, where also the authenticity of an influencer is in direct correlation with the success of her of his endeavours (Audrezet et al., 2018).

As Bruhn (2016) pointed out there is a direct relationship between the employee satisfaction and the economic success of a company. In consequence the better organized and internally engaging a crowdfunding campaign is set up the higher the satisfaction of the employees will be. The success of the crowdfunding campaign can be set as a common goal to reach together, which is not driven alone by the management, but by the whole team (Feldmann et al., 2014). If not the work for the crowdfunding campaign is in the staff’s center of interest, but the joint journey to success the satisfaction will rise and so the economic success of the company as well.

The satisfaction of the customer with the company and especially with the products or services offered is directly connected with the economic success of the company (Stauss and Neuhaus, 1997; Hennig-Thurau, 2004; Bruhn, 2016). The more satisfied a customer is the more often she/he will buy products or consume services of the company because of a higher loyalty, the lower the price elasticity of demand and the higher the probability of recommendation and of the realization of up- or cross-selling potentials will be (Zahorik and Rust, 1993). If a product or service meets or exceeds the expectations a customer has towards it, the satisfaction will rise. The trust towards the brand or the company will also increase. An existing customer getting an information about a crowdfunding campaign of a company can be turned into a crowdfunder or a person spreading the information about the campaign, if the past experience with the company is satisfying and the authenticity of the campaign and its goals seem valid. The stakeholder, who become a crowdfunder later, wants to fulfill needs by engaging with the company.

Maslow for Stakeholders

Maslow's (1943) hierarchy of needs is a basic model to understand the motivation of human beings to develop and fulfill their needs by material and immaterial means. Stakeholders in the business environment are rationally acting beings or organizations, trying to maximize their own benefit (Dinter and Winter, 2008).

Physiological needs can be found at the basic level of the hierarchy. Adapting these needs to those of a stakeholder, namely one which is in touch with an organization, would mean that basic needs could include the registration of the company, a given structure, brand of activity and liquidity to do business. Without these basic requirements, without the fundamental goal of creating and maximizing profit, a company or individual cannot do business and cannot act as a stakeholder to a company (McLeod, 2007).

On the second level of the hierarchy the safety needs can be found. Transferred to a stakeholder the safety needs can be found in a solid internal financing structure as well as stable, formal contractual relationships with other businesses (Kunc, 1992). The financing on the one hand and the contracts on the other hand can form the foundation for a successful company, building upon the basic needs discussed on the first level of the stakeholder's hierarchy of needs.

The third stage of Maslow's (1943) hierarchy is constituted from social desires/belongings. For a stakeholder this means having a vivid, suitable and authentic internal company culture as well as a pleasant intercompany relationship (B2B relationship). Such connections are not built upon contracts only, but also refers to human interactions and a level of common goals and values, which are discussed and shared. Therefore, this level is an alignment of common views on business subjects on medium term, which is often directly connected to human-to-human interactions (McLeod, 2007).

Self-esteem in Maslow's hierarchy of needs is seen as the realization of ego or status needs. Adapted to the stakeholder the status needs can be internal guidelines, a clear vision or the materialization in the form of artefacts (Kasper and Mayrhofer, 2009, pp. 322-327). In the relationship with other businesses the stakeholder aims for a deeper interpersonal connection (friendship) with the responsible counterparts as well as for long-term business development perspectives. These could include milestones for joint growth, long-term contracts or projections on the future work on the market.

The final and highest level according to the hierarchy of needs is self-actualization. Concerning a stakeholder this level includes on an internal level the creation of spin-off businesses or the institutionalization of intrapreneurship (Hisrich, 1990). From an external angle mergers and acquisitions along with investing, managing and/or becoming the shareholder of another company might be part of the highest level of needs. This is also in accordance to the lifecycle a company is going through as the organization can expand,

stagnate or diminish, whilst skimming profits through expansion will prolong the existence of a company (fig. no. 1).

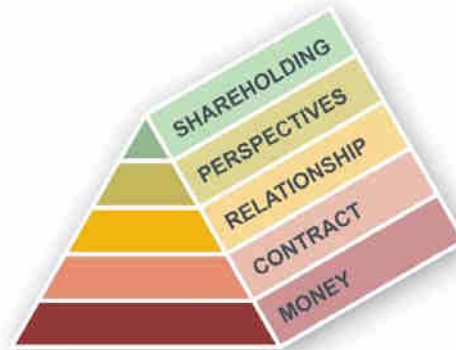


Fig. no.1 Commercial Stakeholder Hierarchy of Needs

Source: own figure adapted from Maslow, 1943

The customer primarily aims to fulfill the expectations associated with the product/service. Therefore, a value unit for enabling the exchange transaction (i.e. money) is needed (first level). As soon as the customer enters into a formal transaction agreement with the company a contract is in place (second level). The third and fourth level of the adapted hierarchy of needs can be found in a good and growing relationship between the customer and the employee, which in turn has a direct impact on the economic success of the company (Bruhn, 2016). If an employee as the point of contact with the customer is doing a good job fulfilling the expectations of the company the relationship with the customer will deepen and the satisfaction of the customer will increase. At the final level the customer becomes an ambassador of the brand/company, an enthusiast, which is deeply emotionally connected with the values and vision of the company (Meffert, 1999). This type of customer can be converted to a crowdfunder.

The employee wants to have a safe job to earn her/his living (first level) as well as a formal working contract with a long-term perspective with a company offering security (second level). Internal, intra-company relationships between the staff member and the firm constitute the third and fourth level (Bruhn, 2016). On the fifth level the engaged employee is a spokesperson for the company, i.e. also recruiting potential staff members and participating in an ESOP (employee stock ownership program).

The crowdfunder can be seen almost as the typical commercial stakeholder (see above). Money is the foundation she/he is building the business life upon (first level). To engage in crowdfunding monetary funds are needed. To act in a secure environment a contractual basis with all rights and obligations is drafted (second level). The crowdfunder is building his investment on a stable and reviewed contract. Crowdfunding gives all parties the opportunity to get to know each other, to build a relationship (third level), to exchange ideas for future development and to find joint perspectives (fourth level). Crowdfunding per se, as becoming part of a project in terms of funding it and getting a product/service in return or getting direct shares, is the realization of the fifth level, which then still develops with the crowdfunder bringing in her/his abilities/talents and pursuing individual goals like maximizing the gain out of the investment (Gerber et al., 2012).

Therefore, crowdfunding is a way of self-actualization – especially for people who want more impact on businesses than available via the stock exchange, but do not want to become entrepreneurs themselves (fig. no. 2).



Fig. no. 2 Crowdfunder Hierarchy of Needs

Source: own figure adapted from Maslow, 1943

Impact of Crowdfunders on Economic Success of the Company

Having characterized the personality and the economic drivers for a crowdfunder and adapting the hierarchy of needs to his profile the relationships the crowdfunder has in terms of the act of crowdfunding are of interest.

As most of the crowdfunding activities are enabled through internet platforms, where the potential crowdfunder registers and then engages in a project, a relationship between the crowdfunder and the platform can be assumed at this point (Parker et al., 2016). This relationship can grow as the crowdfunder trusts the platform to offer campaigns worth engaging.

One of the specifics of crowdfunding is the ability to get in touch with the employees and internal stakeholders of the company. If the crowdfunder realizes this opportunity, another relationship is originating on that level. The crowdfunder wants to get information as well as return on his engagement. In return the provision of external feedback is offered. The employees are giving the information and getting into a dialogue with the crowdfunder to discuss her/his inputs. The expectation of the crowdfunder on that relationship can be money- or participation-oriented, the employees are expecting the basic engagement. If the trust in this relationship is building up the employees feel affirmed in their work for the company as an external partner is not only engaging, but also providing input and time for the company. This positively influences the corporate culture by outside influences. Also, the individual perspective on the future of the company is altered as more people seem to trust the mission of the firm (Valančienė and Jegelevičiūtė, 2014).

The crowdfunder does not have any direct contact to the customers or clients of the company per se. This can change once the crowdfunder is attending meetings or is acting as a testimonial in marketing activities like audio/video clips (Ryu and Kim, 2016). The crowdfunder expects to receive reassurance from the customers resembling the market that his engagement is the right one and will pay off. The customer is expecting positive feedback for his loyalty towards the company. The contact of crowdfunder and customer, which can also develop into a relationship, can facilitate positive affirmation of the engagements with the company on both sides. The crowdfunder is acting as an ambassador for the company and is a symbol of external trust put into the firm.

Adding the economic success of the company into the model this leads to an adaption of Bruhn's (2016) model of the correlation of employee and customer satisfaction with the economic success of a firm. The figure below depicts the relationship and influences, excluding the relationship of the crowdfunder with the platform as the primary function of the platform is enabling the engagement for a medium- to long-term direct relationship (fig. no. 3).

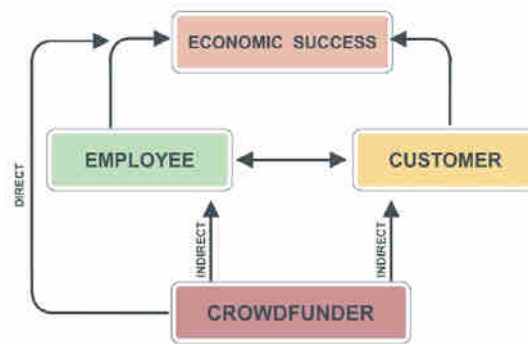


Fig. no. 3 Direct and indirect influence of Crowdfunders on Economic Success of the Company

Source: own figure adapted from Bruhn, 2016

The described relationships of crowdfunders with employees and customers have a positive impact on the employees and customers and therefore there is an indirect impact of the crowdfunder on the economic success of the company. As outlined above the relationship of the crowdfunder and the internal stakeholders are probably stronger, more intense and direct. Also, a direct influence of the crowdfunder on the economic success of the company can be assumed as he is providing a monetary engagement.

Recommendations and Conclusions

As the theoretical foundation shows the interactions of the different actors, empirical proof is needed to verify the impact that crowdfunders have on the economic success of the company. This proof can be split in two different categories, the proof of the direct influence and the proof of the indirect influence.

A quantitative empirical study of companies across various sectors can show the differences in terms of short-term economic success of the company with and without crowdfunding efforts. There are two main challenges to overcome at this point: First, to find companies within the same industry which seem to be comparable by size, lifecycle position and financial status. Second, to exclude other influencing factors besides crowdfunding which have an impact on the short-term economic success of the company. Scenarios can be drawn up simulating the lifespan of the company without the crowdfunding campaign.

Measuring the indirect influence of crowdfunders on the economic success of the company via communication efforts with employees and customers is synonymous with measuring the impact of one mediating factor. As a quantitative approach without a large data set for analysis does not seem promising, a qualitative approach is taken into consideration. Qualitative interviews of the employees implemented using a semi-structured interview guideline and evaluated according to Mayring (2010), unveil the psychological impact of the crowdfunder's support on the workforce. To capture the leverage on the customer a survey targeting different customer groups is being proposed.

A following, deeper understanding of the consequences of the participation and involvement of crowdfunders will lead to develop a scope of arguments in terms of discussions about stakeholder relations. In this regard the proposed research will contribute to the shift from a shareholder to a stakeholder perspective (Fassin, 2008; Baumfield, 2016).

Building upon a basic understanding of crowdfunding and the influence of employees as well as customers on the economic success of a company, this article turned to the Maslow hierarchy of needs and adapted it in the first step to the commercial stakeholder and in the next step to the crowdfunder. Taking this adapted hierarchy of needs into consideration a model of the direct and indirect influence of a crowdfunder was drafted. Whilst failing to

provide empirical research on the interrelation, possible approaches to proof the model and use it for practical implications were given.

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DIGITAL INNOVATION IN THE HEALTH SECTOR – A DETERMINANT OF HEALTH STATUS. RECORDS IN THE EU

**Mihaela Mihai¹, Emilia Țițan², Daniela-Ioana Manea³
and Crina-Dana Ionescu⁴**

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: mihaela.mihai@csie.ase.ro; E-mail: emilia.titan@csie.ase.ro;

E-mail: daniela.manea@csie.ase.ro; E-mail: crina.ionescu95@gmail.com

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Abstract

Financial risk represents one of the negative effects of the increase in life expectancy, generated especially by the increase in the number of long-term illnesses. The development of e-Health solutions is one of the main objectives of the European Union. Thus, the integration of digital innovations in the medical systems will lead to the acceleration of the medical prevention process, the determination of an early diagnosis offering the possibility of personalized care and treatment.

The main objective of this paper is to identify the beneficial aspects of the latest discoveries in the field of technology on the state of health. Thus, the result obtained by applying the methods of multidimensional data analysis offers a perspective on how public digitization, in addition to the other socio-economic factors included in the Cluster Analysis, influences the improvement of the health status. Estonia is noted as Europe's digital leader, offering digitization solutions such as e-Residency, e-Governance, Digital ID, I-Vote and e-Health, with revolutionary benefits for patients. At the same time, we can notice a direct correlation between the years lived with disability and the average expenditure on health per capita, as people living in countries with higher expenditure on healthcare tend to live longer. The need for digital and technological innovation has increased the pace of innovation, as well as the investments in the R&D sector, making digital innovation an important determinant of health status. At the same time, a healthy silver population means active participation in social life, and improving health through digital innovations leads to an increase in healthy life expectancy and a positive correlation with life expectancy at the age of 65.

Keywords: digital innovation; health; e-health; multivariate analysis

JEL Classification

O00, I15, I180, C38

Introduction

Health has always been a major concern for a considerable number of stakeholders, from governments, ministries, political leaders, to private partners, non-governmental organizations, health professionals or various business communities. We notice that people live longer, which in statistical terms translates into a higher life expectancy, at both global and European Union level. However, as life expectancy increases, the amount of long-term illnesses begins to increase too. Thus, from the general concept of life expectancy there are two important aspects regarding the health status of the population: the healthy life expectancy, as well as the years a person lives bearing the burden of disability. In this context, there is an inexorable increase in the demand for medical care and therefore an acute need for digital and technological innovation in health. A key question about digital innovation and its future refers to the health challenges that future innovations must address, as well as the types of progress that are on the horizon (Cornell University, INSEAD, and WIPO, 2019).

1. Life expectancy and the economic context

As defined by the World Health Organization¹ (WHO), *life expectancy at birth* is a summary measure of death rates at all ages, and all health programs contribute to it. At the same time, life expectancy is a representative measure for assessing the health of the population as well as the differences in health around the globe. This is more comprehensive than the infant mortality metric, which focuses exclusively on mortality at an early age, while life expectancy captures mortality throughout the life cycle. The average global life expectancy reached 72,6 years in 2019, according to United Nations estimates, and in the case of the European Union (EU) it is above average, reaching 80,9 years. Despite this, there are still large inequalities both between and within countries. Today, the populations of many of the richest countries in the world have reached a life expectancy of over 80 years. For example, life expectancy in Spain, Switzerland, Italy and Australia was over 83 years, and the highest value was recorded in Japan, reaching about 85 years. By contrast, for countries with poor health, life expectancy reaches between 50 and 60 years, with Central African Republic being the country with the lowest life expectancy in 2019, with only 53 years (Roser et al., 2020).

Similar to life expectancy at birth, *life expectancy at age 65* reflects the number of additional years that a 65-year-old can live, if exposed for the rest of his/her life to the age-specific mortality rates. In the European Union, life expectancy at 65 was estimated at 19,9 years, reaching 21,4 years for women and 18,1 years for men. Between countries, it varies between 14,1 years, in Bulgaria or Latvia, and 19,6 years in France for men, and as for women it varies from 17,8 years in Bulgaria to 23,6 years in France (Eurostat, 2019).

It is interesting to analyze whether the extra years of life gained through increased longevity are spent in good or bad health. As life expectancy at birth is not able to quantify this aspect, relevant indicators that reflect the health status of a population have been developed: *healthy life expectancy* and *years lived with disability* (Eurostat, 2020). We can notice that in most countries there has been an increase in both aspects: as life expectancy has increased worldwide, so healthcare, along with improved treatments, has contributed to the increase in the number of years lived on average with a certain disability (Roser et al., 2020).

Healthy life expectancy provides an indication of the general health of a population, representing the equivalent of the average number of healthy years that a newborn is expected to live if he/she would go through life, being subject to age-specific death rates and health-specific levels for a given period. Thus, healthy life expectancy is focused on quality of life rather than quantity. Globally, healthy life expectancy was 63,3 years in 2016, and for the European Union it was estimated at 64 years for women and 63,5 years for men. Healthy years of life are an important measure of the relative health of the populations in the European

¹ https://www.who.int/gho/mortality_burden_disease/life_tables/situation_trends_life_expectancy/en/

Union. It is noteworthy that in higher income countries the inhabitants live more years with the burden of a disability or illness than in lower income countries. In this analysis, we chose to use the *health expenditure per capita*, which quantifies the economic resources dedicated to health functions and refers primarily to the health goods and services consumed by the resident units (Roser, et al., 2020).

The following graph Fig. no. 1) shows a positive correlation between the years lived with disability and the average expenditure for health per capita, as the people living in countries with higher expenditure for healthcare tend to live more years with disability. This results from increased funding in general care and treatment, which allows for an extension of life with a given disease or disability. At the same time, Latvia distinguishes itself as the EU state that allocates the smallest amount for health (\$ 940/person) as well as the state with the lowest number of years lived with a certain disability (9,4 years), while Luxembourg is at the opposite pole, with the highest health expenditure (\$ 6812/person) and the highest number of years that people live with disability (11,6 years). Romania occupies the second-last position out of the 28 countries in the study, from the point of view of the health expenditure per inhabitant, with \$ 1079/cap, as well as with regard to the years lived with disability, with 9,7 years.

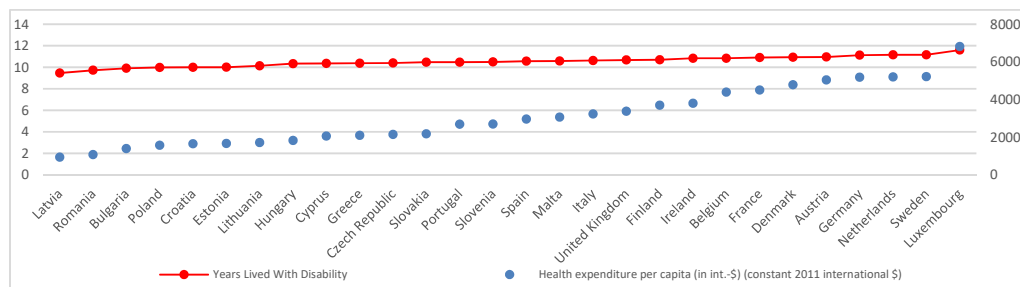


Fig. no. 1 Years lived with disability vs. Health expenditure, 2014

Source: Our world in data, 2019. *Life Expectancy* by Max Roser, Esteban Ortiz-Ospina and Hannah Ritchie. <https://ourworldindata.org/life-expectancy>

In addition to *healthcare expenditure*, *Real Gross Domestic Product* (GDP) is another indicator that highlights the idea that countries with a more developed economy also have better health. By measuring the value of the total final output of goods and services produced by an economy over a certain period of time, GDP is used as a proxy for developing the standard of living for a country. In the study "Life Expectancy" (Roser et al., 2020) it has been observed that after analyzing the correlation between real GDP and life expectancy countries with higher GDP tend to have a higher life expectancy. However, economic development is not the only determinant of health, as scientific understanding and technological progress make effective public health interventions possible, such as vaccinations, hygiene measures, oral hydration therapy, and public health measures.

The measurement of disability is based on the question of The Global Activity Limitation Indicator (GALI), which comes from the survey "The European Union Statistics on Income and Living Conditions" (EU-SILC)², where the answers to the question are quantified: "At least for the last six months, have you been prevented due to a health problem in the activities that people usually do? Yes, strongly limited / Yes, limited / No, not limited". Based on this survey, Eurostat calculates both the *share of people with good or very good perceived health*, as well as the *unmet need for self-reported medical examination and care*. Both indicators measure the weight of the population aged 16 and over, with the difference that the first

² https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Activity_limitation

indicator refers to the population that is perceived as having "good" or "very good" health (subjectively judging the health on a scale from "very good" to "very bad"), and the second indicator refers to the population reporting unmet needs for medical care for one of the following reasons: "Financial reasons", "Waiting list" and "Too far to travel" (all three categories being cumulated). It has been found that indicators of general health status are a good predictor of future healthcare use and population mortality. It should be noted, however, that the result may be affected by the subjective perception of the respondents, as well as their environment of origin (Eurostat, 2014).

2. Digital innovation as a determinant of the health of the population

The difference between *life expectancy at birth* and *healthy life expectancy* is the equivalent of years lost due to disability (YLD). The main determinants of the loss of healthy years are musculoskeletal disorders, mental disorders (depression, anxiety), neurological disorders, hearing or sight loss, cardiovascular disease or diabetes. Digital innovations in health are meant to combat these conditions, with a view to prolonging the healthy years, as well as life expectancy. Therefore, the increased need for digital innovation in the health sector has increased the pace of innovation as well, while allocating more funding for the Research & Development sector. This has made digital innovation an important determinant of health.

The Global Innovation Index 2019 (GII) explores the role of medical innovation, as it will shape the future of healthcare through artificial intelligence (AI), genomics or mobile health applications, which will transform the provision of healthcare in both developed and emerging countries (Cornell University, INSEAD, and WIPO, 2019).

The adoption of digital solutions in health is one of the main objectives of the European Union. This necessity is stimulated by the aging process of the population, as well as by the sustainability of the quality of provided care. Furthermore, the European Commission has recognized that promoting innovation in the field of e-Health in Europe is the way forward to ensure better and more sustainable health, as well as safer care for EU citizens. In addition, innovation in the field of health ensures a more qualified workforce, more efficient and more sustainable care systems, more responsive public administrations, but also new business opportunities and a more competitive European economy (Imbrișcă and Neațu, 2015).

*The Digital Economy and Society Index (DESI)*³ is a composite index that summarizes relevant indicators on Europe's digital performance and tracks the evolution of EU member states in digital competitiveness. Over the last year, all EU countries have improved their digital performance: Finland, Sweden, the Netherlands and Denmark achieved the highest scores for DESI 2019 and are among the world leaders in digitization, followed by the United Kingdom, Luxembourg, Ireland, Estonia and Belgium. However, there are also countries that have a long way to go, with Romania having the second lowest DESI score after Bulgaria, and with EU as a whole needing improvement in order to compete on the global stage. Although DESI index has five dimensions, in our study we focus on the one dedicated to *digital public services*, having *e-Health* as a sub-dimension of interest, with a weight of 20%. The e-Health sub-dimension comes also from the weighted average of three standardized indicators, each one of them with a weight of 33% (European Commission, 2019): *e-Health* measures the percentage of people who have used the healthcare services provided online, without having to go to the hospital (for example, receiving an e-prescription or online consultation); *The exchange of medical data* refers to general practitioners who exchange medical data with hospitals and doctors; *e-Prescription* refers to general practitioners who use electronic prescriptions.

A number of emerging technologies for healthcare, including telemedicine, smartphone applications, biosensors for remote diagnosis and monitoring, speech recognition and

³ <https://ec.europa.eu/digital-single-market/en/desi>

automatic image interpretation, will be particularly important for the healthcare workforce. Digital healthcare technologies have the potential to speed up the process of getting closer to the patient's home and offer the opportunity for people to be more informed about their care, allowing them to work along with healthcare staff in order to make treatment decisions.

As we move toward complete genome sequencing, genomics will expand beyond rare diseases and cancers, producing benefits in the prevention and management of common diseases. It is now possible to make corrections in a person's DNA, which could lead to remedies for previously untreatable diseases, as well as the delivery of targeted therapies. Such an intervention will be able to replace some palliative therapies in the next 10-20 years, with the potential to reduce the costs of chronic treatments.

Completing the digitization and integration of medical records will result in the full benefits of digital medicine, such as early diagnosis, personalized care and treatment. However, it is essential for the healthcare system to be prepared to adopt any new technologies, in a spirit of equality and equity. A number of social factors affect health outcomes and digital health technologies should remedy this in order not to consolidate inequalities, paying particular attention to vulnerable and marginalized groups.

3. Results and discussions

In order to analyze the effects of digital innovation on the health of the population, it is necessary to know, besides the healthcare needs of a population and its state of health (quantified using traditional indicators), the economic resources dedicated to health systems as well as the openness of the population to use the latest digital innovations in the field. The indicators used in the study have as sources primary indicators used in the calculation of DESI and EUROSTAT data (Eurostat, 2017), data processing being performed with XLSTAT.⁴

Thus, using Cluster Analysis, we will obtain a segmentation of the 28 countries of the European Union in 5 clusters (Fig. no. 2), based on the indicators used in the analysis: *Healthy life years and life expectancy at birth, by sex; Healthy life years and life expectancy at age 65 by sex; Share of people with good or very good perceived health by sex; Self-reported unmet need for medical examination and care by sex; Individuals using the internet for seeking health-related information; Real GDP per capita; 5b1 e-Health; 5b2 Medical data exchange; 5b3 e-Prescription; Health care expenditures by provider.*

Cluster 1 includes Austria and Luxembourg. Although it is characterized by the highest average values in terms of *GDP* and *Healthcare expenditure by provider*, we observe a low average value of *life expectancy at birth* (~ 57 years). It is worth noting that in terms of *GDP*, Luxembourg ranks at the top of the EU countries and in terms of *health expenditure* it ranks the third in the same ranking. In 2017, The Legatum Institute Foundation published the report on the Global Prosperity Index, and Luxembourg is considered the healthiest nation in the world with a life expectancy of 82 years. This pillar of the index is composed of three components: the mental and physical health of a country, the infrastructure of the health systems and the availability of preventive care.

Cluster 2 made up of Belgium, Denmark, Finland, Netherlands, Spain, Sweden and United Kingdom differentiates itself by the highest average of the indicators *Healthy life years and life expectancy at birth; Healthy life years and life expectancy at age 65; Share of people with good or very good perceived health*. On the other hand, start-ups in Sweden are focused on creating digital healthcare and developing digital technology in the field of health. For example, the KRY medical service that allows physicians and psychologists to meet patients through the video interface, it is encountered in the publicly funded national health systems in Sweden, Norway and Spain. The countries included in this cluster are in the first 25

⁴ Addinsoft, (2020). XLSTAT statistical and data analysis solution. New York, USA. <https://www.xlstat.com>.

positions of the *Global Prosperity Index* and are in general developed economies with resources which makes them rank as the healthiest in the world.

At the same time, in a recent study on the digital transformation of 17 integrated health programs from 8 European countries, including the Netherlands, Spain and the United Kingdom (Baltaxe, et al., 2019), it shows that all states included in the analysis have at least a partial implementation of Electronic Medical Record (EMR) and intend to improve the implementation of EMR in the future.

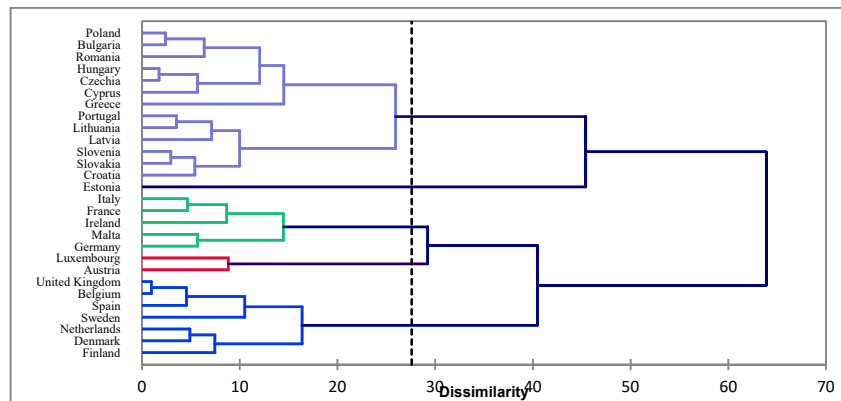


Fig. no. 2 Dendrograma

Source: Own processing with XLSTAT

Cluster 3 is composed of: Bulgaria; Croatia; Cyprus; Czechia; Greece; Hungary; Latvia; Lithuania; Poland; Portugal; Romania; Slovakia; Slovenia. It is the largest grouping and it is distinguished by the lowest average values of the indicators *Real GDP per capita*, *5b2 Medical data exchange (DESI)* and *Healthcare expenditure by provider* and through the most modest developments in digital innovation. In Lithuania, IT companies have developed a HUB for innovation (Digital-Lithuania) that offers a multitude of innovative solutions in the public sector. Among the digital healthcare services offered we can name the patient e-mail services portal, electronic health services (with development of the electronic prescription service for patients); the information system on compulsory health insurance.

In Romania, at the beginning of April 2020, it was launched 9SOS, the first integrated private telemedicine system offering assistance and support services to people affected by COVID-19. This is a complex and complete solution that has the functions of registering, sorting, evaluating and monitoring those affected by COVID-19 as well as helping to reduce the load of the medical system by systemizing and automating the contact with infected persons.

Cluster 4 is represented by Estonia. Nearly three decades after regaining its independence, Estonia had the courage to invest in IT solutions, reaching the point that it can now be considered Europe's digital leader. Starting with the first step in digitization in 1995, when all Estonian schools were connected to the internet and culminating with the e-residency service (2014) which allows entrepreneurs, regardless of nationality or area in which they live, to obtain a transnational digital ID for access to public services, so e-residents can set up/manage a remote business in EU.

Other milestones in Estonia's digitization process: *e-Government* (1997) – 99% of public services are available as electronic services; *Digital ID* (2002) – launch of a mandatory national identity card that offers digital access to all secure electronic services; *I-Vote* (2005) – Estonia becomes the first nation in history to offer online voting at national elections; *e-Health* (2008) – patient health data available online; 95% of the data generated by hospitals/doctors are digitized. All this led to Estonia's 25th place in the GII 2019 ranking and

obtaining Europe's leading position for providing online public services in the DESI hierarchy 2017. At the same time, according to the results of the global cyber security index determined by the International Telecommunication Union (ITU), Estonia was designated the most important European nation.

Noteworthy it is also the revolution of the health system with the help of digital solutions: e-Health Records, e-Ambulance and e-Prescription⁵. Currently, 99% of the health data are digitized, 99% of prescriptions are digital, about 2,3 million monthly queries related to medical information are identified, and the billing of healthcare services is 100% electronic. However, paradoxically, for the indicators of *life expectancy at the birth and life expectancy at age 65*, Estonia is below the EU average.

Cluster 5: France; Germany; Ireland; Italy; Malta. Considered the fourth world health market in 2018 and one of the top ten countries in terms of health expenditure per capita (measured as a percentage of GDP), Germany has a relatively low degree of digitization of the health system. The first electronic health law in German history was approved in 2015. Subsequently, in 2017 were initiated electronic medical services, the possibility of fast and safe transmission of medical information and the provision of video consultations. Starting with 2018, it is possible to store emergency medical data such as blood group, allergies, history of previous illnesses etc. on an electronic health card.

Regarding Italy, at the end of 2019 Paolo Romolo Locatelli – scientific officer at the Politecnico Di Milano's Digital Innovation in Healthcare Observatory, declares "There is a delay in the digital transformation process, and the healthcare sector needs to speed up the transformation to reach the real impact on digital services for patients and citizens"(Postelnicu, 2019). He also underlined the use of the Electronic Medical Records (EMR) due to relevant regional projects (for example, in Lombardy and Veneto). Of maximum interest, but with a slower evolution, is also considered telemedicine, due to the services requested by patients and doctors alike. Research on the impact of digital innovation on health aims at a better understanding of how the latest discoveries in technology lead to improved health. This gives an overview of the integration of digital innovation in health systems and provides a perspective on how socio-economic factors and public digitization influence or correlate with *healthy life expectancy* and *years lived with disability*. Considering that the final solution is not always the optimal solution, the validity of the results of the Cluster Analysis is given either by the confirmation of the grouping solution used or by the interpretative methods of graphical representations.

Conclusions

The evolution of medical technologies, as well as a greater focus on prevention, health and well-being, will bring major improvements in patient outcomes. High quality, affordable healthcare for all is important for sustainable economic growth, as well as for the overall quality of citizen's life. While significant progress has been made over the last decades on several dimensions, there are gaps in access to quality health care for a large part of the global population.

With the evolution of digital and biological technologies, the importance of data integration and management in the medical system also increases. Health innovation is now evolving massively around the Internet of Things, Big Data and Artificial Intelligence, which involves huge power changes within the health sector. Emerging markets have a unique opportunity to capitalize on medical innovations and invest in new healthcare models in order to reduce the gap to more developed markets. However, it must be taken into account that new health innovations as well as their costs can increase the health gap between the rich and the poor. As previously mentioned, Estonia's health system has been revolutionized by innovative

⁵ <https://e-estonia.com/solutions/healthcare/e-health-record/>

electronic solutions and the benefits of accessing electronic health services have not only been just for patients and physicians, as these government policies have also led to economic benefits for hospitals.

In the future, we want to include in the analysis the impact of blockchain technology on the medical systems and on the pharmaceutical industry, as well as the study of 5G mobile technology use in instant healthcare. Another factor that will be included in a future research will refer to the implementation of digital medical solutions for the disadvantaged and the elderly, which is difficult to manage under the current conditions generated by the coronavirus pandemic.

Acknowledgments

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AIRLINES SUSTAINABLE BUSINESS MODELS

Casandra Venera Pietreanu¹, Sorin Eugen Zaharia² and Adina Petruța Pavel³

^{1) 2) 3)} Politehnica University of Bucharest, Romania

E-mail: casandra.pietreanu@yahoo.com; E-mail: sorin.zaharia@gmail.com;

E-mail: adinappavel@gmail.com

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Abstract

The paper presents a research on airline competitive sustainable strategies in the context of globalisation, green marketing and sustainable air transport market. These strategies are mainly based on investments in new environmentally friendly technologies, ancillary revenue diversification and opportunities offered by new operational procedures, taking into consideration the European Strategy Flightpath 2050. The target group of analysis contains airlines from Europe, North America, Australia and Asia, from legacy and low cost business models. The specificity of each model is analyzed taking into account common and distinctive indicators, capabilities and major contributors to the airline environmental consciousness. The authors study how the changes in sustainable business models have introduced essential alterations in the aviation industry and analyze the phenomenon of “greenwashing” that amends the passenger perception of an airline brand. Finally, the paper exhibits if the changes brought by airline strategies for becoming environmentally friendly bring higher incomes or not. Future demands take into consideration innovative solutions for sustainable business commitment as a way to educate passengers.

Keywords

Airline management, environmental protection programs, green marketing, LCC, legacy airlines, smart environmental standards, sustainability.

JEL Classification

C80, D40, F64, L11, L93, M31, R40

Introduction

This research concerns an analysis of green strategies used by airlines for sustainability development parallel with “green marketing” success. The phenomenon is analyzed in depth, based on a detailed examination of airlines’ reports and international rankings. In order to provide a thorough understanding of airlines adaptations to green marketing, data was collected from international regulatory authorities and environmental organizations or groups, but also from academic sources. After examining different emission trading systems and

offsetting schemes, the authors use quantitative and qualitative methods to assess the impact of technological solutions as drivers of change toward greener solutions but also “eco-friendly” marketing management or air transport business success. In this context, sustainability solutions, process adaptations and the communication of air transport providers, but also consumer scepticism is assessed. Indicators related to environmental effectiveness are reviewed, parallel with revenues and other key indicators, since they provide a clear image of the green marketing programs’ impact on customers. Thus, the methodology combines analysis of primary and secondary data, comparative studies and surveys in order to maximize the utility of information and the study results.

The criteria for choosing the analysed target group were: relevance of airlines on the air transport market; relevance of their efforts to reduce environmental impact; geographical area (majority from Europe, but also one from North America, Asia and Australia, which have an important number of flights in Europe; belonging to both LC and LCC business models). After a study of the sites (Alternative Airlines, 2020) and (AirHelp, 2019), the target group contains the following airlines from LC model: Delta Airlines, British Airways from IAG Group, Lufthansa from Lufthansa Group, KLM from Air France-KLM Group, Cathay Pacific and Qantas, and two LCC: Ryanair and EasyJet (Table 1).

Table no. 1 Target group of analysis characteristics (data from 2019)

Airline	Airline type	Pax. number (millions)	Pax. experience ranking	Sustainability ranking
Delta Airlines	LC	204	17	3
Ryanair	LCC	146	68	9
Lufthansa	LC	145	24	2
Easyjet	LCC	91.6	71	7
Qantas	LC	55.8	5	13
British Airways	LC	46.8 (2018)	23	11
Cathay Pacific	LC	35.2	n.c.	8
KLM	LC	35.1	12	4

Source: based on data from AirHelp 2020, ‘AirHelp Score 2019’, AirHelp, 2019

Competitive management strategies for sustainable development of legacy and low-cost carriers’ business models in the context of airline sustainability

The general strategies of airlines for becoming eco-friendly consist in the following categories of solutions: collaboration, innovation, alternative energy, on route efficiency, efficiency on the ground, employees, building and construction, step-change technology and carbon management. At same time, the airlines focus on their eco-friendly marketing strategy for becoming a “green brand” (Fig. no. 1).

Airlines’ strong performances reflect their yearning to be on the top of the rankings and in passengers wish. Their key focus is the improvement in revenues, but taking into consideration the competitive aviation market, each airline should develop successful initiatives to the benefit of their capacity growth. In this analyse, the authors will focus less on the technical and operational solutions, but on airlines’ green marketing in order that the passengers who get more environmentally conscious, know which airlines are taking the steps to improve their (and their customers’) carbon emissions. The question is whether green marketing of airlines reflects reality or says more than it really does.

The general strategy of LC and LCC is to combine the main levers that bring financial profit with the sustainability actions that bring more image profit. For financial profit, for example, LCCs rely on low ticket prices and strong auxiliary revenues, stimulating in this way demand growth (Pietreanu et al., 2019). Ryanair, Europe’s lowest cost airline, had a total revenue of

7,697 million € at the middle of 2019 (6% increase from 2018), from which 2,436 million € from revenue services (a rise of 11% per passenger) (Ryanair, 2019). In parallel, Ryanair is well ranked from sustainability criterion (Table 1), being on 9th place.

For EasyJet, in 2019, the revenues (£1,124 million) increased by 9.7% from 2018, and so did the ancillary revenues (£301 million, with an increase of 10.8%) and the total profit before tax fell to £430 million (EasyJet, 2020). These performances were reached with important efforts; assessment of the impacts of different policies, diversification of tariffs and services, analysis of consumer behaviours or competitively sustainable planning (Pietreanu et al., 2019). Consequently, Easyjet's carbon offsetting program mirrors a reduction of 800k tons of carbon so far. The company takes all its merits and self-proclaims "the industry leader in sustainability" since it's "9 mil passengers flew net-zero carbon flights" (EasyJet, 2020). They declare that their sustainable growth is supported by a responsible way of doing business.

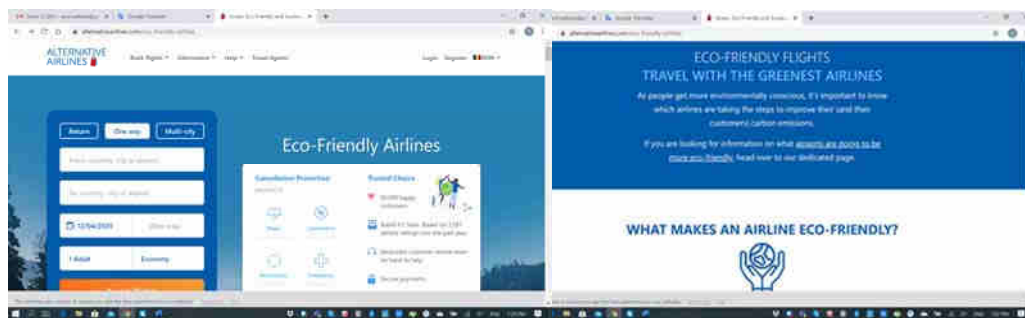


Fig. no. 1 The web site “Alternative airlines” for promoting eco-friendly airlines

Source: Alternative Airlines 2020 - ‘Eco-Friendly Airlines’, Alternative Airlines, 2020

LCC emphasizes on minimizing costs, while legacy airlines on the quality of their services. The question is if the typical characteristics of legacy carriers regarding the provision of higher quality services can also be reflected in offering an improved sustainability program. For example, in 2019, the legacy airline Qantas which is Australia's flag carrier operated the first-ever worldwide commercial flight to produce no deposit of waste.

Regardless of the airline's business model and particularly green initiatives for reducing the footprint on environment, all air transport providers have to comply with environmental regulations, work with suppliers and the government for a market-based approach to pollution minimization and develop offsetting schemes. Governments and international organizations do not cease to provide new and more stringent regulations; the Paris Agreement limits global temperature rise to less than 2°C above pre-industrial levels and IATA's 2050 target is for an aviation that emits a net 50% less CO₂ against 2005 levels. The international body ACI, launched a marketing competition: “Low carbon accreditation”.

One of the most important actions for reducing the footprint on environment is to have a younger fleet equipped with new aircraft that pollute less. For example, EasyJet was investing in new generation aircraft (A320 family), which are more fuel efficient and environmentally friendly, leading to lower operating costs and lower carbon emissions over time (15% less) with an average age of the fleet of 7.4 years. Furthermore, EasyJet is developing electric aircraft for short-haul routes, having 2030 year term. In the same sense, Ryanair is purchasing €20billion worth 737 Boeing in order to lower emissions by 16% per available seat and also to reduce their noise footprint by 86% with the introduction of the Boeing 737-800NG. Aviation is the most efficient form of mass point-to-point transport, accounting for just 2% of EU man-made CO₂ emissions. Even as a very small part of a big problem, aviation must play its role in addressing climate change; and Ryanair, as Europe's largest and most successful

airline, is committed to leading the way. Airlines success in environmental protection is closely linked to main aircraft manufacturers. Considering the investments in new environmentally friendly technologies, the A350 XWB aligns to the requirements of increasing environmental concerns, the effectiveness of fuel economy, but also passenger expectancies (Edge et al., 2010). The landing/take-off cycle CO₂ emission factors are presented below for different aircraft types (Table 2):

Table no. 2 Landing and take-off CO₂ emission factors per aircraft type

Aircraft type	CO ₂ LTO emission factors/aircraft [kg/LTO/aircraft]	Fuel consumption [kg/LTO/aircraft]
Boeing 737-300/500	2480	780
Boeing 737-700	2460	780
A320	2440	770
A321	3020	960
A330 200/300	7050	2230

Source: based on data from ICAO, ICAO Doc 9889 Airport Air Quality Manual, ICAO, 2011

Also, by flying more efficiently, cost savings to airlines and potential savings in CO₂ emissions (i.e. 14.3m metric tons from 2020 to 2030) can be reached by the implementation of automatic dependent surveillance–broadcast (ADS–B) technology (Marais, 2016). ADS-B technology provides a more accurate report of an aircraft's position, which allows smaller separation standards than it was previously possible to do in a safe manner, and this reduces the amount of time aircraft must spend waiting for clearances, being vectored for spacing and holding, with a beneficial impact in reducing pollution and fuel consumption.

Aside from investments in new environmentally friendly technologies, airlines are concerned about promoting ancillary revenues and loyalty programs, for developing a better relationship with passengers. Each of these directions can be transformed in smart environmental targets in order for an airline to become a “Green brand”. Although most of the people can not establish a connection between ancillary revenues and environmental protection, it seems that a simple choice of an ancillary service, like the selection of the class category seat in the aircraft can reflect in passenger’s sustainability commitment. Business or first class passengers have a higher carbon footprint, since these classes mirror a lower RPK results in a higher amount of CO₂ per passenger. (The Guardian, 2010) shows that a British Airways B747 provides 0.66 sq m. per economy seat, while business and first class seats have 2.3 sq m., respectively 3.6 sq meters. This translates in 3.5 times increase in CO₂ footprint for business class and 5.5 times for first class than a seat in economy class.

Airlines sustainable business commitment

Airlines have developed different interesting societal sustainability programs that became bright marketing strategies. KLM Royal Dutch Airlines launched in 2019 a campaign called “Fly Responsibly” in which it urges its passengers to “Fly less”, suggesting them to be more responsible and protect the environment. More so, the airline seemed to be requiring the passengers not to fly: “Could you take the train instead?”. The approach can be considered by some to be laudable, because a 2020 report made by FlyGreen shows that a trip by train from Amsterdam to London saves up to 90% of the CO₂ emissions produced by a flight on the same route (FlyGreen, 2020). But, as (Zetlin, 2019) shows, this is just a “Greenwashing” strategy, with the purpose to place the airline as an environmentally friendly one, which is (partially) a false information. Surely, lately, all airlines, regardless of if they are legacy, LCC or charters, develop grandiose sustainable programs, but the question is whether their intentions are to provide green solutions for the industry, or this is just a marketing spin. In airlines’ annual

reports, the environmental policy occupies a large volume. For example, Ryanair in his 2019 Annual Report affirms that: “As well as being Europe’s favourite airline, with the best customer service, Ryanair is Europe’s cleanest, greenest major airline”. Out of real solutions for becoming an eco-friendly airline, Ryanair’s Report contains also provocative statements “To deliver on our environmental commitment, Ryanair has announced a 2030 carbon efficiency target and an absolute climate target for 2050” (Ryanair, 2019), which cannot be fully guaranteed, but are very good for their green brand.

The following table shows the most representative green solutions of analyzed target group.

Table no. 3 Airlines sustainability involvement

Airline	Vision	Goals	Actions
Delta Air Lines (DL,DAL)	Become first carbon neutral airline globally	• Focus on hazardous waste. Implement a recycling program	• Developed a flight weather app • Buy 50,00 carbon offsets and remove 300,000 pounds plastic waste/year
Ryanair (FR/RYR)	Be the greenest, cleanest airline in Europe	• Go plastic free by 2023;15% emission reduction by 2030	• Launch a leading offset program • Lower fuel consumption and noise emissions
Lufthansa (LH/DLH)	Maintain balance. Out of responsibility	• 1.5%/year energy efficiency increase • 50% reduction in CO₂ emissions by 2050	• Replace 4 engine aircrafts with twin-engine for long and short-haul flights • Reduce kerosene consumption and promote alternative fuels • Eliminate unnecessary flights detours
Easyjet (EC/EJU)	Nil	• Produce up to 50% lower NO_x emissions • Use 50% quieter aircraft than previous generation	• Offset the carbon emissions from fuel used for all flights • Reduce the amount of plastics used • Invest in new generation Airbus A320 neo and A321neo
Qantas (QF/QFA)	Become the leading airline committed to sustainability. Fly greener	• Eliminate 75% of the waste that they produce • Reduce energy consumption by 20% • Cut net emissions by 50%	• Eliminate single-use plastics within all of their flights • Encourage passengers to use electronic boarding passes • Reduce fuel use and greenhouse gas emissions • Aircraft weight reduction initiatives
British Airways (BA/BAW)	Become the first UK airline to reduce carbon emissions on domestic flights	• Decrease the amount of noise • Improve air quality • Adjust take-off and landing procedures to minimize emissions	• Environmental legislation compliance • Invest > £20b in environmentally friendly and efficient aircraft • Create eco-friendly amenity kit within their World Traveler Plus Cabin • Transform waste into jet fuel • Invest in efficient ground vehicles
Cathay Pacific (CX,CPA)	Minimize environmental impacts	• Focus on climate change, biodiversity and conservation	• Develop “Fly Greener” programme • Urge the passengers to purchase carbon offsets for their journeys
Air France-KLM (AF/AFR) (KL/KLM)	Protect the planet. Contribute to the UN Sustainable Development Goals	• Reduce the amount of CO₂ emissions by 20% per passenger in 2020 • Improve the overall energy efficiency	• Buy new fuel-efficient aircrafts • Replace Boeing 747 with Boeing 787 Dreamliner • Create flights which are driven by biofuel rather than jet fuel • Promote alternative transport modes

Source: based on data from Matrix, 2020. Airlines sustainability commitment (Matrix, 2020), and Spohr, C., 2019. Sustainability Report 2019, Spohr, 2019

Table 3 presents different views and strategies towards the minimization of environmental impact of air travel; actions supported by airlines' complying with environmental legislation. Each of them have one thing in common: to replace their fleet with more efficient models. The figures may indicate that legacy airlines develop their mission to protect the environment with more attention and care than LCCs.

An Eurocontrol report from the end of 2019 indicated that Ryanair is the 5th airline regarding CO₂ emissions. But, being the top low-cost airline in Europe, with a traffic growth of 9% from 2018 to 2019 and considering it transports the highest number of passengers from any EU airline, the ranking is not bad. Easy Jet has also lowered their carbon emissions per pax/km from 78.46 gr in 2018, to 77.07 gr. in 2019 (EasyJet, 2020).

The customer impact on airlines' environmental protection programs

In the last years, it seems that the industry has made a coalition for sustainable aviation. EasyJet experiences a 7% increase in the number of passengers aware of their carbon offsetting program and 11% increase in satisfaction (EasyJet, 2020). They point out that this is an important criterion for passengers to elect the services of the same airline in the future. If the airline suggests that environmental protection becomes a responsibility also for the passengers and they have the opportunity to offset their CO₂ emissions, this turns into a marketing approach that supports a particular view of a story.

It is very interesting to assess the impact such campaigns have on the customers, since they aim to place that particular airline closer to the passenger's heart. A study performed in 2012 by Swiss International Air Lines showed that environmental activities and responsibility carried by airlines seemed to be appealing to passengers (Wittmer and Wegelin, 2012), but the actions were not clearly visible or understood. This is also the case of Lufthansa, which although invested billions in airline sustainability, due to lack of marketing strategy, its actions were not so visible. This is no longer the case nowadays, an airline environmental protection program, but more so, the development of "green marketing", have improved significantly from 2012 to 2020.

Green marketing is considered an alteration to the airline traditional marketing mix (Mayer et al., 2014). Airlines trick or mislead their passengers in believing they are part of the change, since they can also support the sustainable future of aviation. Although they may not be environmental activists, passengers can get involved thinking that now they have an important role in aviation environmental protection. By trapping them in this mirage of saving the planet, airlines give their customers the false perception that they should only fly with the airline that is the leader in sustainability, because this is the only way passengers can be sure of their own implication. Ryanair points out that its passengers are smart since they chose this LCC to the detriment of other airlines, less environmentally efficient. Also, suggests that EU should support aviation and indicate to its citizens to drive less and switch to flying (Ryanair, 2019). But deceiving passengers in sustaining one airline's smart environmental policy is not easy. Some researchers argue that "Sustainable development means absolutely nothing to most people and never will" (Oepen, 2006), since it doesn't provide a clear definition, nor an image of how it might be in the passenger's benefit.

The passenger perception can draw a fine line between what is considered an environmental communication problem or a good green marketing. One cannot assess or even have access to information regarding the airline's economic interests behind its efforts to integrate air transportation policies into sustainable development, but the ecological dimension of airlines' programs can be of an interest for the passengers only if it becomes a personal concern or awakens in the passenger some emotions, (i.e. they start to feel better about themselves for protecting the environment).

With a probability of P=87.3%, passengers have the intention to fly with an environmentally friendly airline, and with a probability of P=94.3%, people are willing to spend more in order

to access the services of a sustainable airline (Hwang and Choi, 2017), that has a great sustainability commitment formulation.

While waiting for electric flying or air travel on hydrogen, other researchers indicate that people could “make themselves more sustainable” by flying less (Porcelijn, 2017). Nevertheless, one cannot undermine the importance of air transport in tourism and business and its economical and social impact. More so, due to present trends, IATA estimates that in the context of the following 17 years, air travel will reach 8.2 billion passengers (IATA, 2018). Thus, the only plausible option and enabler to achieving a balance in case of no practical alternative transport mode, is to fly with sustainable airlines that develop genuine offset programs and use biofuels or eliminates plastic use. To a small extent, passengers can make their own options so that their contribution to pollution has the lowest environmental impact. (FlyGreen, 2020) gives tips on flying greener: avoid indirect flights or choose to fly at economy class; since business class seats occupy more space than the ones at economy.

The targets set internally and the performance alignment within the industry, put great pressure on airlines. These green solutions can be achieved only with a cost. Delta Air Lines commits to invest \$1billion in emission reduction based innovations. Notwithstanding, their actions towards economy-wide emission reduction are not balanced with the huge number of flights operated. In this context, the airline is required to show that it is in fact contributing to air transportation sustainable development, not just “greenwashing” (GlobalData, 2020). In this case, the airline’s sustainability commitment formulation and implementation is considered an unsubstantiated initiative, the substrate being the intention to persuade the customers to form a much better image of the airline through their smart environmental policies. Without a robust implementation and a consistent assessment of the impact of different policies, models and assumptions, the green marketing strategy although it can be sustained by good communication plans and commitment formulation, is in vain.

Conclusions

International bodies have elaborated more exigent legislation for sustainable development of air transport industry. These regulations are completed by national regulations, sometimes more exigent than the first ones. Also, all categories of airlines business models develop strategic programs for sustainable development and all airlines are preoccupied for their “green brand” and incorporate green actions in their marketing mix.

After the examination of documentary information, results regarding airlines marketing strategies, their choice for a communication channel that has the best capacity to transmit a green vision to the passengers were quantified by the instrumentality of the expected or achieved success of sustainability mission statement.

Sometimes, the advertising of airlines for their preoccupations for reducing the footprint on environment is more ambitious than the real actions. Airlines’ communications are becoming well developed in order to transmit more environmental consciousness, a green image of the airline. The sustainable development has impact also on the financial results of airlines, their actions for environmental protection lead to the decrease of operational costs, (less fuel burned means less emissions, for example). One of the most important ways to reduce the CO₂ footprint used by airlines is to invest in a new fleet beneficiary of the application of new engines, aerodynamic technologies and the use of biofuel.

LC pay more attention on environment protection solutions than LCC, and the European Commission programs are also developing an eco-friendly air transport.

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RISK ASSESSEMENT OF CHEMICAL RESIDUES IN FOOD DETERMINED BY THE USE OF PESTICIDES IN AGRICULTURE

Alina Stancu¹, Radu Antohe², Martin Dorin³ and Denisa Rădulescu⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: stancu.alina.madalina@gmail.com; E-mail: radu.antohe@eam.ase.ro

E-mail: dorin.martin@gmail.com; E-mail: dennisaradulescu@gmail.com

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Abstract

The issue of the potential risk of chemical residues arising from the use of plant protection products in agriculture on public health is widely discussed and is a real concern because of soil contamination in the first production phase - on farms, animal contamination by feed and then product contamination in the end. And the worst thing is that the presence of chemical residues is not listed on any label nor is it regulated by law. The present paper aims to analyze the effects of these substances on human health through a two-way approach regarding their degree of toxicity on the body and intake estimation that can produce negative effects in the metabolic processes. The purpose of this analysis is to identify what amount of chemical residue reaches the finished product following each stage of the agri-food chain.

Keywords

Chemical residues, food safety, pesticides

JEL Classification

Q10, I1, Q50, L66

Introduction

Agriculture, as a first branch of the contemporary economy, performs several essential functions while ensuring the necessary food for the entire population. Food security is a difficult task to achieve because of the seasonal nature of agriculture, climate change, and adverse weather conditions in many areas of the globe. To protect the vegetable crops that meet the demand worldwide, it is necessary to use different products that help fight diseases and pests and, on the other hand, increase the resistance of plants to external factors. Plant protection products (PPPs) have a beneficial effect on increasing yield in agriculture by helping to ensure food security. Still, it seems that their irresponsible use has an adverse impact on food safety. Once they reach the ground, on the surface of the plants or used in

animal husbandry, these artificial substances reach the agri-food chain, determining the presence of chemical residues in the finished product. Each stage of the agri-food chain tends to amplify the effects of these residues and to multiply their number by using different cleaning agents and additives. It is well known that food contaminated with chemical residues presents numerous hazards to human health even ingested in a small amount. The present research aims to determine the harmful effects of chemical residues in food due to the use of PPP and the different substances at each stage of the agri-food chain, emphasizing the risks for human consumption and offering alternatives for reducing these risks.

Table no. 1 analyzes the potential chemical risks at each stage of the agri-food chain and provides an overview of all residues that may reach the final product, on the table of consumers.

Table no. 1 Potentially Chemical Risks in each stage of agri-food chain

AGRO-FOOD CHAIN STAGES	CHEMICAL RESIDUES IN VEGETABLE PRODUCTS	CHEMICAL RESIDUES IN ANIMAL PRODUCTS
PRODUCTION PHASE	Pesticides, PPPs, pollutants, mycotoxins, fertilizers	Antibiotics, growth hormones, detergents, pesticides from feed.
PROCESSING PHASE	Surface cleaning angles, detergents, additives, chemical residues caused by poor air circulation, contamination with chemical residues due to incorrectly trained personnel, chemical residues on the contact surfaces	Medicinal treatments, detergents, pesticides arising from the use of aromatic plants, chemical residues caused by poor air circulation, contamination with chemical residues due to incorrectly trained personnel
TRANSPORT	environmental pollutants, detergents, freon, fuels, chemical residues on the contact surfaces	environmental pollutants, detergents, freon, fuels, chemical residues on the contact surfaces
COMMERCIALIZATION	chemical contaminants used in stores, chemical contaminants resulting from reaching the products unpacked by the customers, different types of wax, surface pollutants, detergents, chemical residues from the atmosphere	detergents, surface polluting agents, chemical contaminants used in stores, chemical residues from the atmosphere

Source: Personal processing based on data provided by S Mortimore, C Wallace – 2013 age of the agri-food chain

The identification of potential risks at each stage of the agri-food chain is indispensable and is not lacking as a principle from any management system (such as the HACCP Hazard Analysis system in Critical Control Points) of the production, processing or marketing units and is real. To find preventive and corrective measures that will lead to the proper functioning

of the processing unit and to minimize the risks, thus ensuring high-quality products, fresh and uncontaminated. To ensure food safety, a very well-trained staff that respects the rules of the unit is needed, and an equipped unit is necessary to avoid contamination of food due to poor air circulation or the penetration of pollutants from the atmosphere. Also, the technical-material parameters must be strictly observed, and continuous monitoring throughout the agri-food chain is an essential factor in ensuring food safety. The use of selective breeding techniques, fertilizers, herbicides, and fungicides in agriculture has increased the efficiency of food production dramatically. These modern production methods have reduced costs and increased the variety of foods available. Because food production is so complex, a systematic approach is needed to identify potential risks at each point in the production chain so that food poisoning and food contamination are avoided. The presence of pesticide residues is a cause for concern for consumers because pesticides are known to have potentially harmful effects on other non-target organisms other than pests and pathogens. The primary concerns are their toxic effects, such as affecting the reproductive system and the development of the fetus, as well as their ability to cause cancer and asthma. Because of the toxic action that public opinion believes that all pesticides and plant protection products (PPPs) have, they are considered extremely harmful substances that can have adverse effects on human health and the environment. The responsible use of these artificially synthesized chemicals involves the use of quantities below the maximum permitted limit (MRL) legally regulated by the European Commission by Regulation (EU) 2020/421 of 18 March 2020. Pesticides are often required for both agriculture and economy in general because of the destruction of crops by diseases or pests that, in the absence of effective methods of control, produce devastating effects, economic losses also occur at harvesting. Organic farming cannot provide the necessary food supply to cover the demand of the population, and the agricultural producers consider that these protection plant products are indispensable. When assessing the risk and adverse effects on human consumption of pesticide residues and the presence of these substances in agri-food products, consideration must be given to meeting the demand of the ever-growing population of the world and to ensuring safe food for consumption, accessible as a price and availability, and nutritious rich. The efforts of the bodies empowered in Romania and the European Union to protect food safety and food security from the point of view of the presence of pesticide residues and of the risk they pose for health, translate into regular and rigorous monitoring, which must be objectively interpreted to draw conclusions correct and in accordance with the scientific reality.

The maximum level of pesticide residues provides a standard by which it can be verified that the foods that have included the use of pesticides in the technological process are safe for human consumption. The mere fact that there are pesticide residues in food does not mean that they are automatically harmful to health. The maximum accepted residue level to be ingested every day, the whole life is calculated by applying a safety factor at least 100 times lower than the dose at which possible harmful effects of the active substance on human health could be detected. In the European Union, these standards are set by the European Crop Protection Association (ECPA) following consultation between the European Food Safety Authority (EFSA) and the Member States. At a national level, an annual monitoring program for pesticide residues from plants and plant products, from domestic production, is being carried out under the supervision of the National Phytosanitary Authority (ANF). According to the report (* report on the national plan for monitoring residues of pesticides from fruit, vegetables, and grains from internal production, for the year 2016 (following Regulation (EC) no 396/2005)) published in January 2017 by ANF, the following results were obtained:

- of the 1026 fruit and vegetable samples analyzed, 1013 samples were compliant, and 13 samples were non-compliant, representing 1% (1 potato, 1 parsley leaf, 5 salad samples, 1 strawberry sample, 1 peach, 4 apple samples);

- of the 683 vegetable samples, 193 (28%) showed pesticide residues, and except for 7 samples that showed pesticide residue values above the maximum permitted limits, the rest of the samples were below the maximum level of safety;

- of the 343 fruit samples, 167 showed pesticide residues below the maximum level of safety, and 6 samples showed residue values above the maximum permitted limits

The risks associated with the use of pesticides in agriculture appear to be insufficient and are suppressed by the negative effects of these substances on human consumption. Because the use of pesticides is not always well planned, with the fight against diseases and pests, negative effects on the biodiversity of plants and animals, on the groundwater and on the terrestrial ecosystems, are seen. According to Majewski and Capel (1995), about 80–90% of the applied pesticides in open field crops can be volatilized within a few days of application (Majewski and Capel 1995). Straathoff also states that spray herbicides that are applied to the leaves of plants and contain volatilized substances are very dangerous and thus end up destroying beneficial plants and contaminating the soil (Straathoff 1986). Worldwide it has been found that endangered species of birds and rodents are greatly affected by the irresponsible use of plant protection products (PPPs) in agriculture and the use of growth agents for both crop and animal husbandry. According to the level of toxicity presented by pesticides, it seems that insecticides are the most toxic substances followed by products designed to fight fungus (fungicide) and herbicides.

The most commonly used pesticides include:

- metolachlor-S is an effective herbicide against grasses;
- glyphosate is an herbicide used to kill weeds and grasses;
- atrazine is also an herbicide used to kill grassy and broadleaf weeds;
- 2,4-D is an herbicide used to kill broadleaf weeds;
- dichloropropene can treat the soil before planting to kill roundworms.

Pesticides can penetrate and contaminate the environment in two ways. If it is used as a water-soluble pesticide that enters the groundwater, in rivers, and cause devastating effects on water and soil quality and, on the other hand, fat-soluble pesticides which are ingesting the contaminated feeds reach into the fatty tissues of the animals and then into the entire chain of production, processing, and marketing of agri-food products, implicitly in human nutrition.

The process of Bioamplification of pesticides in the environment along the food chain starts from contaminating plants with chemically synthesized substances (pesticides). The small ingestion amounts by primary consumers of the food chain, such as grasshoppers or other insects to be eaten by secondary consumers such as small birds and rodents, which in turn are consumed by larger birds or prey animals and thus in their body the amount and spread of ingested pesticide increases. Therefore, the higher the temperature, the greater will be the pesticide concentration, which is known as bioamplification. In agriculture, the process is similar and begins in the production phase (on the farm) where the pesticides used irresponsibly reach the feed of animals that are then slaughtered to cover the demand for meat on the market and become consumed by humans.

The path that pesticides and plant protection products follow to determine chemical residues in the finished product begins in the production phase (on the farm) when different chemicals are applied to crops to protect them from external factors, diseases and pests and strengthen their resistance. The study of the traceability of agri-food products creates an overview on the possibility of food contamination in each phase of processing with different inorganic compounds that negatively influence the quality and safety of the finished product, finding the form of chemical residue. The route of the agri-food chain and the identification of the main potential risks of a chemical nature are highlighted in Fig. no. 1.

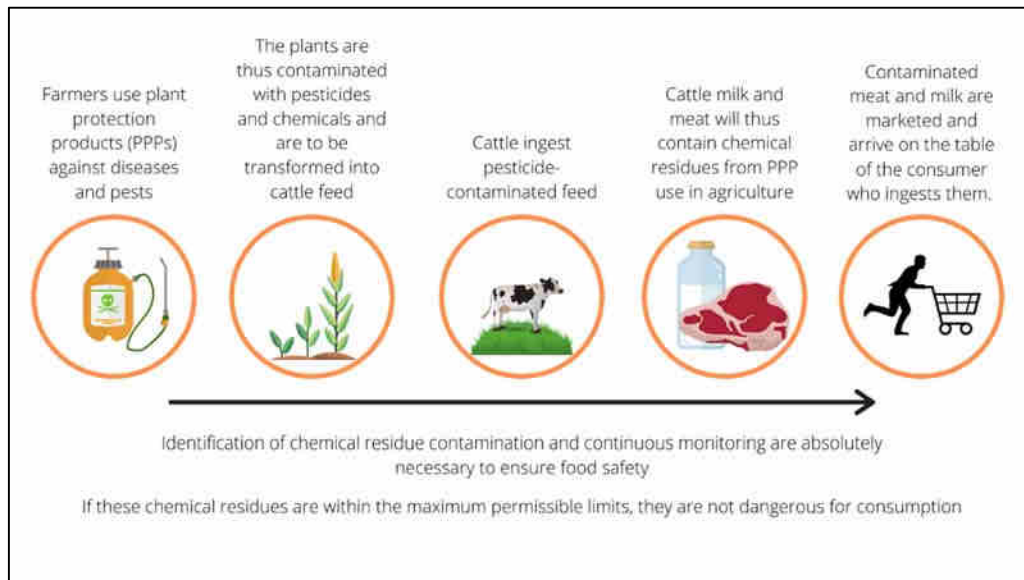


Fig. no. 1 Monitoring of the beef and dairy production chain - Contamination of finished products with chemical residues from pesticides

Source: Alina Stancu, Radu Antohe, 2019. *Food Safety Assessment And The Contaminant Chemical Residues*, IAE, Belgrade

According to a study held by some specialist in nutrition from University of California, San Francisco, in 2017 the fruits and vegetables with the highest level of pesticides are: strawberries, spinach, grapes, kale, apples, nectarines, celery, peaches, pears and tomatoes, and the fruits and vegetables with the lowest level of pesticides are: papaya, avocado, frozen peas, onion, sweetcorn, broccoli, kiwi, mushrooms, asparagus, and eggplant.

In order not to pollute the environment with pesticide residues and to avoid any problems in trade relations with EU countries, the fate of pesticides after use must be well known. In developed countries, the analysis of pesticide residues began in 1950.

These analyzes are performed in laboratories accredited by the competent Accreditation Agency. In these studies, both the legal regulations and the standards published by the national and international organizations are respected. When exporting agricultural products to foreign countries, these products must not contain chemical residues. Therefore, especially after the 1990s, residue analysis has been an important parameter in quality control and quality assurance studies. If pesticide residues are found, especially in agricultural products shipped to Europe, they are immediately notified. Therefore, the reliability and accuracy of pesticide residue analysis data should be checked by quality systems. The accreditation authority of the laboratories carrying out the residue analysis is therefore requested. Accreditation is the approval of an accreditation body that this laboratory is sufficient to perform certain analyzes. The scope of food residue analysis is quite wide. For example, the main residue analyzes are: analysis of naphthalene in honey, analysis of pesticides in fruits and vegetables, determination of benomyl and carbendazim in fruits, vegetables, legumes and cereals, determination of residues of benzimidazole in milk, analysis of pesticides in fatty foods, benzo (A) pyrene (PAH) in olive oil. Determination, analysis of pesticides in feed samples

Conclusions

Over time, pesticides have proven to be almost indispensable for farmers around the world, due to their efficiency in combating diseases and pests, increasing production, and thus bringing countless benefits to the economy and society. In developing countries, the use of plant protection products, including pesticides in conventional agriculture, cannot be replaced by eco-friendly alternatives such as using natural oils instead of insecticides, attracting small birds, and feeding rodents. With crop pests because these methods require additional costs and cannot ensure continuous and sufficient production to cover food security.

The very small subsidies offered by the state to the farmers cannot cover the expenses with all these natural methods so that organic agriculture will spread in all areas of the world and the seasonal character of the agriculture, as well as the increasingly unpredictable weather conditions of the last time, make the vegetable crops more susceptible to climate change, to develop diseases and pests that can often be controlled only with pesticides. The main objective of the present research is delimited around the identification of the advantages and disadvantages that conventional agriculture and organic agriculture bring to the environment and are presented in Fig. no. 2.

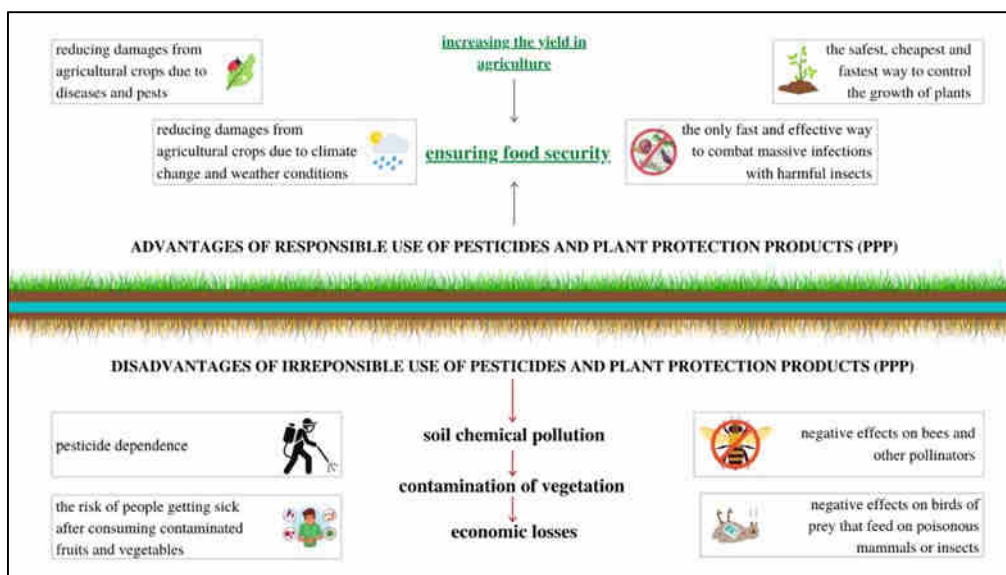


Fig. no. 2 Advantages & Disadvantages of pesticide use in agriculture

Source: Personal processing

Despite all the benefits of pesticides, many adverse effects on the environment and human health have been proven. Their irresponsible use causes contamination of plants, animals, and the environment, and all of these effects affect the human race. Worldwide, effective solutions have been found to minimize the risks of pesticide use, from changing formulas to more natural and not so toxic ones to banning some substances from the market. Also, the legislative norms envisage the responsible use of PPP in imposing the maximum allowed limits, which, if they were respected, would diminish the adverse effects.

In the future, less toxic chemical pesticides can be used in combination with eco-friendly treatments as natural oils and powders or natural remedies that result in more sustainable elimination of pests and insects. This combination promises not only environmental sustainability but also has different applications in controlling urban pests and invasive species (Gentz et al. 2010).

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CHALLENGES FOR ENTREPRENEURS AMIDST THE COVID-19 CRISIS

Mihaela Cornelia Dan¹ and Simona Irina Goia(Agoston)²

^{1) 2)} The Bucharest University of Economic Studies, Romania

E-mail: mihaela.dan@fabiz.ase.ro; E-mail: simona.goia@ase.ro

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Abstract

There is consensus on the fact that the current crisis that the entire world is facing nowadays is unique and therefore not comparable with the previous ones regarding its effects, challenges it poses or possible approaches in order to effectively address it. COVID-19 crisis has direct implications not only on the global and national health system, but also on the deepest structures of the society, human nature and world economy. The present paper focuses on the major challenges that entrepreneurs from various domains are facing and some of the main approaches they adopted. Considering the novelty of the topic and the ongoing events in the field, the research is based both on scientific literature from academic journals and on the latest news from prestigious magazines, newspapers, news agencies etc. which provide last minute information in the field of economics and business administration. Therefore, after delivering a brief introduction on the COVID-19 crisis, the present paper aims at providing an overview of the main challenges faced by various entrepreneurs with a special focus on the Romanian business environment. Next, it presents various approaches of these challenges adopted by entrepreneurs within the broader framework of national and global support schemes. It also tries to envision new emerging trends in the entrepreneurial field which might extend beyond the crisis period and (re)shape the business model of existing and new enterprises.

Keywords

Entrepreneurship, COVID-19, crisis, challenges, Romania

JEL Classification

M00, M13, M20, O10

Introduction

COVID-19 crisis started as a medical event at the end of 2019 in the Wuhan city, Hubei province of China. It rapidly spread all over the world: after Asia, in spring 2020 most of the European countries and also the United States of America have been severely hit by the virus. However, based on current data, none of the continents besides Antarctica have been spared

from the devastating effects of the new potentially deadly coronavirus outbreak (John Hopkins University, 2020; Wang et al., 2020). In some of the wealthiest countries of the world the medical system experienced an unprecedented crisis and proved to be overwhelmed by the large number of patients infected with the novel coronavirus, some of them exhibiting severe symptomatology and therefore necessitating special medical assistance and hospitalization in intensive care units. Many hospitals were overcrowded nearing collapse, lacked protection and medical equipment, the medical and administrative personnel had to cope with very long and exhausting working hours and emotional challenges, many hospitals had to operate well below the regular standard of care. The critical situation in many medical units unveiled the vulnerabilities and shortcomings of the healthcare system and the very limited capacity of reaction to a global biological crisis, like the novel coronavirus pandemic, even in the most prosperous economies of the world and brand-new state-of-the-art facilities (Nacoti et al., 2020; Nicola et al., 2020; The Guardian, 2020). This situation urges a global medical, social and economic response, not just as manifestation of solidarity, but also considering the common interest in a globalized world and the cross border transmission risk. According to Worldometers (2020), as of 23rd of April 2020, almost 2.650.000 cases of the novel coronavirus were reported worldwide, out of which almost 185.000 deaths. The most affected countries considering the number of cases and deaths reported are the United States of America, Italy, Spain, France, Germany and United Kingdom. Romania ranks 32nd according to the number of cases (John Hopkins University, 2020) with 10.096 cases and 527 deaths reported on 23rd of April 2020 (Grupul de Comunicare Strategica, 2020). For more detailed information you can consult Figure 1.



Fig. no. 1 Total cases and Total deaths in selected countries COVID-19, 23rd of April 2020

Source: Own illustration based on data from Worldometers 2020,
<https://www.worldometers.info/coronavirus/>

Socio-economic aspects of COVID-19 crisis

The medical crisis has a turmoil effect on the economy, some authors comparing the current economic situation with the economic scene of World War Two (Nicola et al., 2020). The International Monetary Fund (2020) forecasts that the economy will suffer its worst year since the Great Depression with the global gross domestic product shrinking by 3%, which is much worse than the decrease of 0.1% in the recession year of 2009 after the financial crash. One of the main challenges of COVID-19 crisis is that we deal with competing and conflicting priorities: authorities have to struggle to keep businesses running, while keeping people safe

in their house (Leonard and Kaplan, 2020). This means reduced consumption, while economic growth models are based exactly on stimulating consumption as economic trigger.

The European Union announced at the beginning of March 2020 a five step program that shall respond to the present situation. Depending on the evolution it should be able to deepen or take new decisions for both population and economy. These steps focus on the solidarity principle between the Member States by supplying with protective equipment and medicine in the entire region, liquidity measures to help especially small and medium-sized enterprises (SMEs) by making available the sum of one billion euro for at least 100.000 SMEs, allowing the state aid in more flexible conditions than before, providing state guarantees for banks if they are experiencing difficulties in accessing liquidity and applying the flexibility of the European Fiscal Framework allowing Member States to address the crisis more specifically to the local conditions (European Commission, 2020). With the so-called “Coronavirus Response Investment Initiative” the European Commission is directing 37 billion euros under the Cohesion Policy to fight the Coronavirus impact.

On 2nd of April 2020 another measure with impact was launched, SURE – Support mitigating Unemployment Risks in Emergency – an initiative that will provide 100 billion euros in loans helping people to preserve their jobs and support families. It means financial assistance for Member States in form of loans in order to complement national efforts, a fast deployment and a temporary financial support for workers (European Commission, 2020²). Other impact decisions regard more specifically the agricultural sector, the fishing industry, the most deprived citizens of the European Union and ways of assuring food, clothes, and basic products.

On national ground, Member States are allowed to be more flexible and implement measures that should help on short term economies and citizens. Romania is one of the countries that besides the economic and social lockdown established also the emergency status with a high impact on the human rights and economic activity. Starting with 16th of March 2020 the mobility of citizens is very restricted and only people who cannot do telework are allowed to travel. People have limited access to physical stores shopping for basic needs and individual sports activity.

Regarding the economic decisions in order to minimize the socio-economic impact of COVID-19, the Romanian Government decided to subsidy 75% of the technical unemployment support related to the average national income, negotiated with banks the possibility to postpone up to nine months the payment of loans for individuals and companies, introduced state aid guarantees for SMEs (5 million RON for capital and 10 million RON for investments at 0% interest rates and commissions), introduced taxes reductions for in time payments, assures a rapid return of Value-added tax (VAT) and enforced digitalization of the public services (Guvernul Romaniei, 2020). One important instrument that should help SMEs is the possibility to register for the so-called *Emergency State Certificate* which allows companies to postpone the payment of utilities, to invoke the force clause in different contracts or to suspend loans payments. The condition to receive this certificate is to register starting with March 2020 a significant decrease of at least 25% of the turnover or to be in the situation of a forced lockdown due to national emergency state (e.g. restaurants, bars, hotels, clinics, shopping malls, sports clubs etc.).

In order to prevent a very severe economic and financial downturn, many countries started or plan to gradually relax the restrictive measures despite of the fact that the medical issue of COVID-19 is far of being solved. Given this situation, some specialists warn that a second peak is likely to occur in autumn (Anderson et al., 2020) and claim a long-term plan to fight this outbreak, but also to improve our ability to respond to pandemic in general (Gates, 2020; Nacoti et al., 2020).

In the next section we will discuss some of the main challenges posed by COVID-19 crisis faced by entrepreneurs, with a special focus on Romania.

Main challenges for entrepreneurs

Economic lockdown, social distance, limited physical mobility of people have a major impact on the consumer behavior and on the economic activity of companies. Very affected are small businesses and entrepreneurs who belong, in general, to the most vulnerable groups of actors in the economy. It is not the first pandemic in the history of humans, but for sure the first one in the modern history where the control measures have forced businesses to an abrupt halt (Kuckertz et al., 2020). This crisis brings businesses on new grounds and obliges them to reconsider business plans, strategies, objectives and investments.

We can divide challenges faced by entrepreneurs and small businesses into two main categories: internal challenges influenced by specific factors of the company and external challenges coming from the business environment and society.

Internal challenges refer mainly to money and resources, employees, managers, company culture. This economic crisis means already for many businesses a financial crisis. The high decrease of demand in almost all economic fields makes money a very limited resource for companies and *the lack of liquidity* brings them in the situation of asking for loans. But today few businesses can fulfil the banks' conditions for crediting. Therefore, one good solution is to access the national instruments sustained also by the European Commission. The lack of money forces companies to cut and restructure budgets, postpone or decrease/cancel future investments.

A second challenge refers to the need to *adapt the entire business strategy to the new situation and shifts in demand*. This implies besides innovation, in many cases also restructuring the business model and in some cases the production lines. In order to illustrate this, we have several examples of Romanian companies from the textile industry (for which demand decreased sharply) which reorganized their production process and facilities so that they can produce protection equipment for medical staff and population, which is lacking during this period (Panduru, 2020; Radu, 2020). In a similar way, some cosmetics companies adapted their production line in order to produce the scarce biocides (Digi24, 2020; Farmec, 2020). Even small companies focused on herbs products developed recipes for natural biocides (e.g. Nera Plant). Romanian authorities aimed at supporting this kind of initiatives through a faster accreditation process with simplified procedures and steps, allowed within the state of emergency declared in Romania (News, 2020; Start-up Café, 2020¹).

Another challenge refers to *changing the supply chain and finding new distribution channels*. For many businesses, adaptation within this lockdown crisis means to go online or to further develop their online platforms and applications. And this statement applies both for larger institutions such as operas (e.g. Romanian National Opera, The Comic Opera for Children), national theaters (e.g. National Theatre Bucharest), museums (e.g. The National Museum of Art of Romania), medical clinics (e.g. Regina Maria), but also for smaller and more flexible companies, such as fitness centers (e.g. World Class), dance studios (Victoria Dance Studio), various classes for children and adults in form of webinars or live streaming (e.g. British Council, MimaMuzica, Music Together) and the list might continue. One interesting example are the farms in Romania who traditionally sale their goods to supermarkets chains or in the big markets. Because of the demand decrease they risk to lose a very perishable production and therefore many of them started to sale online, accept credit card payments and deliver directly to end-customers (e.g. Piata pe Roti).

Next challenge refers to the *management of the human resources*. The social distance imposed by the health crisis obliged companies to switch to remote work, temporary or permanent layoffs, flexible working time and work in shifts, even unemployment or cutting off salaries. Managers have to show their people skills and be prepared to reorganize operations and teams in order to assure the same valuable service.

Perhaps one challenge that will turn into a permanent concern and that was not on the top line for many businesses is *risk management and crisis management*. Companies will start to

worry more about their present and future even in more peaceful times and develop procedures and instruments that enable them to react more quickly and efficiently to crises (Kuckertz et al., 2020).

External challenges are influenced by factors that the company cannot change directly, usually businesses react or try to prevent negative influences or benefit from positive ones.

How to conquer such challenges in a world that has stopped? In general, people become entrepreneurs forced by external push factors, by economic crisis and high unemployment (Devece et al., 2016). But today, an economic crisis forces entrepreneurs to close their businesses in a very abrupt way. One recent study shows that one external challenge is represented by the *changes in the consumer behavior*, which creates also some possible new business opportunities. The study which is conducted by the global fintech company Revolut, which has one million customers in Romania (Start-up Café, 2020) describes the current situation: exponential increase of online entertainment (online movie platforms, but especially online gaming services), a tremendous drop of transport (the ridesharing companies register decreases of more than 80%), decrease of spending in restaurants but an important increase of home deliveries (60% more transactions with more than 90% increase in value), a high spending for “Do it yourself” (DIY) products, clothes, shoes, medicines and electronics (e.g. eMAG, the biggest online retailer in Romania, registered an increase of 162%).

This study shows that people adapted rapidly to this crisis, and it is more likely to keep the trend due to the fact that the relaxation measures will be introduced slowly. Companies are now very sensitive to the power of demand of customers and changes in their needs. In this context it is very important how the Romanian state is encouraging the consumption and if the almost 1.050.000 people that have a suspended contract or the 270.000 unemployed people will return soon to the labor market (Ministerul Muncii si Protectiei Sociale, 2020).

The economic lockdown brings companies into new, unusual associations. For instance, the well-known bookstore chain Carturesti which closed all the physical shops entered in an association with the biggest supermarket chain in Bucharest, Mega Image, and installed for the first time in Baneasa store a mobile book shelf, so that customers can have access also to “brain food” (Adevarul, 2020).

Conclusions

In a very short period of time our lives changed dramatically and it is unlikely that we will be able to fully return to our way of living as we know it in the next months or maybe even until a vaccine will be discovered, tested and implemented on a large scale. Words like social distancing and self-isolation belong now to our routine. As the present article shows, the current crisis goes beyond its medical roots and significantly impacts economies and businesses. The large unemployment rates, social isolation and uncertainty regarding the future might have consequences on the mental health of the population and trigger anxieties and concerns which will further influence people’s financial, professional and personal planning.

As depicted before, many entrepreneurs had to restructure their business models and innovate rapidly and under stress, in order to adapt to a continuously changing situation. We consider that some of the common new realities of the business environment will remain and will be used to increase efficiency also after the crisis would have passed. Therefore, we anticipate that remote work will be used in the future at a much larger scale: during the crisis companies developed various mechanisms which would enable them to better manage this process and these could be further deployed in order to cut costs (e.g. with rent and office supplies) and also confer more flexibility to certain categories of employees. Another trend, which has already existed, but amplified exponentially during this lockdown is to switch to online activities or at least to have an online option for certain activities (such as sport activities, cultural activities, courses etc.).

Businesses might now consider more the usage of analysis instruments, predictions tools or strategical and decisions making instruments. Thinking in various scenarios should be a must in business development and learning to function through a disruptive event forces and entrepreneurs and companies to become more resilient.

This paper is just the first step of a more complex project that deals with challenges faced by entrepreneurs during the COVID-19 crisis. In a next phase we aim at concentrating on a qualitative analysis of the challenges faced by companies based on interviews with Romanian entrepreneurs. According to different medical specialists (WHO, 2020) it is likely to register new waves of sick people and for business people, economists and financial institutions (IMF, 2020, OECD, 2020) the consequences of this crisis will prolong till 2021-2022.

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COMPARATIVE PRELIMINARY STUDY REGARDING THE QUANTIFICATION OF FISCAL PRESSURE AT THE LEVEL OF VAT ON THE EXAMPLE OF SOME EUROPEAN COUNTRIES

Raluca Andreea Ghețu¹, Ionela Butu², Adriana Elena Porumboiu³ and Petre Brezeanu⁴

^{1) 2) 3) 4)} The Bucharest University of Economic Studies, Romania

E-mail: gheturaluca93@yahoo.com; E-mail: ionela_butu@yahoo.com,

E-mail: adriana_porumboiu@yahoo.com; E-mail: petre.brezeanu@fin.ase.ro

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Abstract

Fiscal pressure is an economic phenomenon, which has certain tolerance limits by natural or legal persons. Due to the necessity or the desire to oppose this economic phenomenon, these people resort to different methods of avoiding the payment of taxes, taxes and contributions, base of the fiscal pressure indicator, these being in close connection to the effects of said phenomena, being very important to the economic plain. In order to better understand the fiscal pressure phenomenon, we analyzed six states of the European Union, divided into two groups. Four developed states Italy, Germany, Belgium, France and two emerging states Romania and Malta. We analyzed samples from on a sample 1998-2018, where we identified the general fiscal pressure, the fiscal pressure of the Value Added Tax and the VAT collection efficiency. Finally, this article aims to highlight the link between the VAT collection deficit and the standard VAT rate applied in the six mentioned states of the European Union. The data used in this analysis are those published in September 2019 by the European Commission through TAXUD, for the period 2013-2018.

Keywords

tax; fiscal pressure; fiscal pressure VAT; VAT Revenue; VAT Gap;

JEL Classification

E62; H20; H21; H26; H71

Introduction

In the current economic context, taxes represent a compulsory, non-refundable, unconditional contribution due to the state budget consolidated by the taxpayers to the natural or legal persons related to the income they obtain or to the goods they own. Natural or legal persons

are required by the state to pay taxes and agree to this required, with the risk of appearing a burden, but at a time when taxes exceed certain limits of taxability among taxpayers, phenomena occur. Tax evasion brings serious problems to the state's ability to collect revenues (Brezeanu, 2009).

According to the specialized literature, various points of view are present regarding the definition of the concept of fiscal pressure and its approach. Fiscal pressure is seen as “a relative expression of the tax burden borne by contributions” (Tulai, 2005) in documents, it can demonstrate “how tax care puts a lot of pressure”. In other words, it is possible to understand a tax burden on the shoulders of taxpayers.

As stated in the literature, high tax rates will destroy the tax base (Smith, 1776). This concept was materialized by American economist Arthur Laffer, who demonstrated in 1980, with the help of a curve that lowering taxes can bring more revenue to the budget because it stimulates the economy. The level of indirect tax rates and their modification has a major impact on budget revenues. If the tax rates correspond to the allowable area of the Laffer curve, the fiscal pressure will decrease, reducing the tax risk implicitly. At European level, VAT is the basis of Directive 2006/112 / EC on the common system of value added tax, which essentially regulates two important issues: the concrete establishment of the tax area and the application of a minimum standard quota of 15%.

In the context where the standard VAT rates, reduced VAT rates or exemptions are fully harmonized, and the member countries have the right to adopt their own measures, the main objective of the 2006 Directive is for the common VAT system to reach the highest possible level. simplicity and neutrality. To achieve this objective, it would be transposed by the fact that, in the territory of each Member State, similar goods and services bear the same fiscal burden, regardless of the complexity of the economic circuit (Directive 2006/112 / EC).

Methodology for determining fiscal pressure.

In the first part of this article we propose an analysis of the total fiscal pressure, determined as a ratio between the tax revenues (direct taxes + indirect taxes + social contributions) and the gross domestic product. The total fiscal pressure reflects the intensity with the income, which is collected from the natural and legal persons at the level of the whole company with the help of taxation. It shows how big issues the tax burden is on taxpayers' shoulders.

At present, many countries, including Romania, use the method of calculating the net fiscal pressure in the calculation of fiscal pressure, which allows to offer the fiscal image from the financial accounting point of view. The rate of fiscal pressure characterizes the share of the revenues of the natural and legal persons that is subtracted from the budget instead of being left for their reinvestment in the economy. This indicator can have a double acceptance, in a narrow sense - it is presented that the ratio between the amount of taxes and taxes collected on the gross domestic product and in the broad sense - is the ratio between the sum of the taxes, taxes and social contributions to the gross domestic product. In this article both methodologies of fiscal pressure are used, in a broad and narrow sense.

Thus, according to the specialized literature, the tax rate is calculated as follows: $R_f = (\text{Tax revenues} / \text{GDP}) \times 100$ (1).

For this quantification of fiscal pressure we used a sample of two groups of European Union member countries: from the group of developed states we chose Italy, Belgium, Germany, France, and from that of developing or emerging countries we chose Romania and Malta. The analysis period was represented on a sample of 20 years, during the period 1998-2018, the latter being the last year for which statistical data are available, regarding the tax revenues.

Table no. 1 Fiscal Pressure

	1998	1999	2000	2001	2002	2003	2004	2005	2006
U.E. 27	-	-	-	-	41.06	40.69	41.14	41.28	42.17
Italy	40.9	40.8	39.8	39.7	39.4	39.7	39	38.9	40
Belgium	45.2	44.7	44.3	44.1	44.4	43.8	43.9	43.8	43.6
Germany	41.5	42.2	42	40	39.6	40	39	39.1	39.3
France	45.4	45.8	45	44.8	44.1	44	44.1	44.6	45.1
Malta	26.1	27.7	26.6	28.2	29.3	30.5	31.4	33	33.3
Romania	8.1	14.2	16.4	20.3	23.4	28.6	29.9	26.4	28.2
	2007	2008	2009	2010	2011	2012	2013	2014	2015
U.E. 27	42.41	40.65	39.04	38.92	39.34	40.30	40.70	40.84	40.60
Italy	41.3	41.1	41.5	41.2	41.1	43.1	43.2	42.9	42.8
Belgium	43.3	44.1	43.2	43.6	44.4	45.3	46.1	45.7	45
Germany	39.3	39.7	40.1	38.8	39.1	39.7	39.9	39.6	40
France	44.5	44.4	44.1	44.2	45.4	46.4	47.5	47.7	47.7
Malta	34.2	33.4	33.8	33.2	33.4	33.7	33.8	33.5	31.7
Romania	28.9	28.1	27.3	26.6	27.7	28.1	27.4	27.3	27.8
	2016	2017	2018						
U.E. 27	40.70	40.85	41.03						
Italy	42.1	41.8	41.7						
Belgium	44.2	44.7	44.8						
Germany	40.5	41	41.5						
France	47.6	48.3	48.4						
Malta	32.1	32.9	32.6						
Romania	26.5	26.2	27.1						

Source: own calculations based on data from <https://ec.europa.eu/eurostat/>.

From the data presented above, it resulted that the fiscal pressure in Romania registered a slight decrease from 1998 to 2004, when it reached the lowest level of the analyzed period, more precisely to 8.1%, followed by an increase with 21.8% until 2004, 29.9.3% being the maximum reached by Romania, below the European Union average. In the table no.1 presented above it can be observed that of all the analyzed states, in 2013, the total fiscal pressure reaches the highest level in Belgium and Italy (46.1%, respectively 43.2%), followed by Germany and France (41.5%, respectively 48.4%) in 2018. For the emerging states, a lower share of fiscal pressure can be observed, Romania reaching the highest level in 2004, and Malta in 2017 (32.9%). It is observed that 2 of the 6 analyzed states are from the developed countries, Belgium, France, over a period analyzed exceed the level of the total fiscal pressure registered by the European Union average, below that threshold being instead all the emerging countries analyzed. The differences observed in the analysis of the quantification of fiscal pressure were generally produced by the fiscal policy instituted by the Member States in relation to social protection and the degree of fiscal compliance.

Next, we carried out a qualitative analysis of the tax pressures governed by VAT. In the second part of the qualitative study we analyzed the fiscal pressure at a macroeconomic level registered by 6 member states of the U.E. Italy, Belgium, Germany, France, Romania and Malta, the comparison was made for the period 1998-2018 in which all six states had legislative changes involving value added tax. Malta and Romania adopted a lower VAT rate. On the other hand, Belgium, France, Germany and Italy have raised the value of the standard VAT rate, because VAT is the most powerful taxation tool against tax evasion and fraud, at the expense of taxes. income or profit, thus bringing in substantial revenues. The importance of the VAT value added tax and its quantification at the level of fiscal pressure. Starting with 1967, the member states of the U.E. e have adopted a well-developed system of income

taxation, in which they have also introduced VAT systems, the most important arguments in support of VAT, being considered a taxing instrument more resistant to fraud against income taxes, thus bringing in substantial revenues. From the perspective of the share of revenues generated from VAT at EU level it is considered to be the most important indirect tax. In support of the important VAT in the presented article we emphasize that in the European Union, respectively in the 27 countries (EU2020), in 2018, the total VAT revenues represent a significant percentage of 7.1% of GDP - the gross domestic product according to the data presented (Eurostat).

Methodology for determining the VAT tax pressure.

The weight of fiscal pressures was calculated according to the relation: $\text{Primp\%} = (\text{Total Indirect Tax} / \text{GDP}) * 100$, (2)

Indirect tax exclusively includes value added tax,

GDP is the gross domestic product. The data used in the analysis was collected from the Eurostat database and the database of the European Central Banks.

In the following table we follow the evolution of fiscal pressure in relation to value added tax, in the six developed and emerging states (Italy, Belgium, Germany, France, Malta, Romania,) for the period 1998-2018, as well as the average for of the European Union.

Table no. 2 Fiscal Pressure VAT

	1998	1999	2000	2001	2002	2003	2004	2005	2006
U.E. 27	-	-	-	-	6.8	6.7	6.9	7.05	7.2
Italy	5.9	5.8	6.2	6	5.9	5.7	5.6	5.7	5.9
Belgium	6.8	7	7.1	6.9	6.9	6.9	6.9	6.9	7
Germany	6.5	6.7	6.6	6.4	6.2	6.2	6.1	6.1	6.2
France	7.6	7.6	7.2	7.1	7	7	7.1	7.2	7.1
Malta	4.4	5.1	5.4	5.7	5.8	6	6.8	7.7	7.6
Romania	1.7	2.7	3.5	4.4	5.9	7.5	7.19	7.48	7.64
	2007	2008	2009	2010	2011	2012	2013	2014	2015
U.E. 27	7.3	6.9	6.5	6.8	6.8	6.8	6.9	6.9	6.9
Italy	5.9	5.7	5.5	6	6	5.9	5.8	5.9	6.1
Belgium	7	7	7	7.1	7	7.1	7.1	6.9	6.7
Germany	6.8	6.9	7.3	7	7.1	7.1	7	6.9	7
France	7	6.9	6.7	6.8	6.8	6.8	6.8	6.9	6.9
Malta	7.3	7.5	7.4	7.2	7.6	7.5	7.6	7.5	7
Romania	7.86	7.72	6.59	7.55	8.44	8.35	8.03	7.56	7.95
	2016	2017	2018						
U.E. 27	7.01	7.09	7.16						
Italy	6	6.2	6.2						
Belgium	6.8	6.8	6.9						
Germany	7	7	7						
France	6.9	7.1	7.2						
Malta	6.9	7.2	7.4						
Romania	6.40	6.12	6.33						

Source: own calculations based on Eurostat data.

According to the data presented in table no.2, regarding the evolution of the fiscal pressure related to value added tax, there is a slight difference between the developed and developing countries. Thus, the values are registered between 5.9% -8.44%. Italy having the lowest indicator of fiscal pressures from the point of view of the value added tax, the highest level is registered in Romania in 2002, due to the political instabilities, this returning at an average

level until the end of 2018. High levels of fiscal pressure related to indirect taxes (VAT), compared to the levels of the European Union were recorded during the period analyzed 1998-2018 in Romania, Malta (developing states) followed by Germany, France, Belgium and last in the rank Italy.

In the case of Italy, the increase of the fiscal pressure exerted by these types of indirect taxes is explained by the increase of the standard VAT rate from 20% to 21% in 2012 and then to 22% in 2014, the reduced rate being maintained at 10% / 4 %. The higher level of the fiscal pressure related to indirect taxes in France is most likely due to the increase of standard and intermediate VAT rates (transport services, restaurant services, hotel accommodation, renovation of private homes, home care, parks). thematic, television, organic fertilizers, etc.) these being reduced from the standard quota 19.6% and 7% to 20% and 10% from 01.01.2014. In the case of Romania, the main source of income is indirect taxation, but the fiscal pressure related to these types of taxes fluctuated from 19% until 2010 when it increased by 5%, in 2015 the share decreased by 4%, in particular due to the reduction of the quota VAT from 24% to 20% starting with January 1, 2016, finally reaching the standard rate of VAT of 19% in 2017. Also, a reduced rate of 9% applies to goods and services from the following categories: bakery products, specialized medical equipment, books, newspapers, school textbooks, access to different cultural services, accommodation services and assimilated to hotels.

In Malta, starting with 2004 the standard VAT rate is 18% (increased from 15%). The slight decrease of the fiscal pressure can be justified by the reduced application rates of 5%, respectively 7%. In most cases, the analyzed states have had a constant evolution in relation to the fiscal pressure related to the indirect taxes, respectively the value added tax, during the period analyzed 1998-2018.

In Belgium, the indicator analyzed does not display large fluctuations during the period verified because the VAT rates have remained the same level since 1998, the standard share being 21%, and the reduced rates 6% and 12% respectively. Also, Germany is among the countries with the lowest consumption taxes in the European Union, respectively the standard share 16% until 2006 when it increased by 3 percent reaching 19%, and the reduced rate remained 7% throughout the period verified, therefore the revenues from these indirect taxes remained relatively constant.

We can see that the fiscal pressure has decreased for the year 2018 compared to the previous year, for all the mentioned states, which can say that the fiscal burden has begun to be tolerable for the taxpayer. We can not fail to observe that the states with diminished fiscal pressure are those whose economy is much better developed, and the payer bears the tax burden favorably, even if it is greater than that of a developing state. Fiscal pressure produces pressure due to several internal and external factors, but also due to the reluctance of taxpayers to improve the economic conditions presented in Romania and Malta. France enjoys a relaxing share of fiscal pressure, which shows that the fiscal system adopted is a burden on taxpayers. There are some opinions that the level of taxation of a state is influenced by both external and internal factors of the taxation system, such as: the scale of progression of tax quotas, the way of determining the taxable mass, the gross domestic product, the type of public institutions. and the effects of the increase of fiscal pressure that are manifested in various forms, a printer that we mention: the diminution of productive efforts, the risk of inflation through taxation, risk related to the fact that any increase of taxes has an impact on the processes of price determination, fraud and tax evasion, generated by high or increasing fiscal pressure, as well as political resistance. In order to determine the degree of risk of tax evasion, we can consider the coefficient of collecting the value added tax for the states analyzed above.

The value-added tax collection performance

Because value added tax has become an important component of the tax system in most states, and fiscal pressure decisively influences the performance of value added tax collection, in this article we wanted to analyze at a macroeconomic level from the quantitative point of view the performance of its collection on based on the indicator of the efficiency of VAT collection, we took as the model the study from „Value Added Tax: Onward and Upward? (Jorge Martinez-Vazquez and Richard M. Bird, 2010) based on the formula: VAT collecting efficiency = VAT collected / (Standard quota $\times$ GDP) (3)

I begin the analysis of the emerging states Romania and Malta, which are similar in terms of VAT rates at the end of 2018. At the same time, from the desire to highlight the differences between the emerging and developed countries, Italy was included in the study, Belgium, France and Germany, the analysis of the value added tax collection performance is carried out for the period 1998-2018. Table no. 3 presents the Vat collecting efficiency for Italy, Belgium, Germany, France, Malta and Romania.

Table no. 3 VAT collecting efficiency

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Italy	0.29	0.29	0.31	0.30	0.30	0.28	0.28	0.29	0.30
Belgium	0.32	0.33	0.34	0.33	0.33	0.33	0.33	0.33	0.33
Germany	0.40	0.42	0.41	0.40	0.39	0.39	0.38	0.38	0.39
France	0.39	0.39	0.37	0.36	0.35	0.36	0.36	0.37	0.36
Malta	0.29	0.34	0.36	0.38	0.38	0.40	0.38	0.43	0.42
Romania	0.09	0.14	0.18	0.23	0.31	0.39	0.37	0.39	0.40
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Italy	0.30	0.29	0.27	0.30	0.30	0.28	0.28	0.27	0.28
Belgium	0.33	0.33	0.34	0.34	0.34	0.34	0.34	0.34	0.33
Germany	0.36	0.36	0.38	0.37	0.37	0.37	0.37	0.37	0.37
France	0.36	0.35	0.34	0.35	0.35	0.35	0.35	0.34	0.35
Malta	0.41	0.42	0.41	0.40	0.42	0.42	0.42	0.42	0.39
Romania	0.40	0.40	0.34	0.39	0.35	0.34	0.39	0.35	0.34
	2016	2017	2018						
Italy	0.27	0.28	0.28						
Belgium	0.32	0.32	0.33						
Germany	0.37	0.37	0.37						
France	0.35	0.35	0.36						
Malta	0.38	0.40	0.41						
Romania	0.33	0.32	0.33						

Source: own calculations based on Eurostat data.

According to the specialized literature, the efficiency of collecting value added tax is calculated based on the VAT efficiency indicator. The data refer to a state with a single standard rate of VAT, which has taxable transactions without exemptions and tends without tax evasion, the efficiency of the VAT should register the value 1, i.e. 100%. From the quantitative verification, it resulted that Belgium registers the highest rate of VAT efficiency 0.43 in 2005, subsequently decreasing but not by much. On the other hand, the developed countries have retained the highest VAT rate, but the VAT efficiency has remained as good throughout the period analyzed, which shows that the economic situation is quite good, with a low degree of economic crime. For the emerging countries, the VAT efficiency indicator is quite low, indicating a reduced value added tax collection and a rather high tax evasion rate. In Romania, there has been no major improvement in the efficiency of VAT, after the VAT rate decrease.

The situation of VAT receipts in the period 2013-2018

In the following, we will compare the direct proportional relationship from the fiscal pressure generated by the burden of taxation quotas, the efficiency of collecting value added tax and the situation of VAT receipts. All three variables are closely linked, influencing the taxpayer to pay taxes to the state budget (Butu et al., 2019). Thus, the budget is directly influenced by the fiscal pressure, the tax rates, the efficiency of their collection and finally the results are observed in the situation of the receipts, in this article we talk about the receipts of VAT. At the level of the European Union, for the period 2013-2018, the situation of the VAT deficit for this indirect tax is illustrated in fig. no. 1

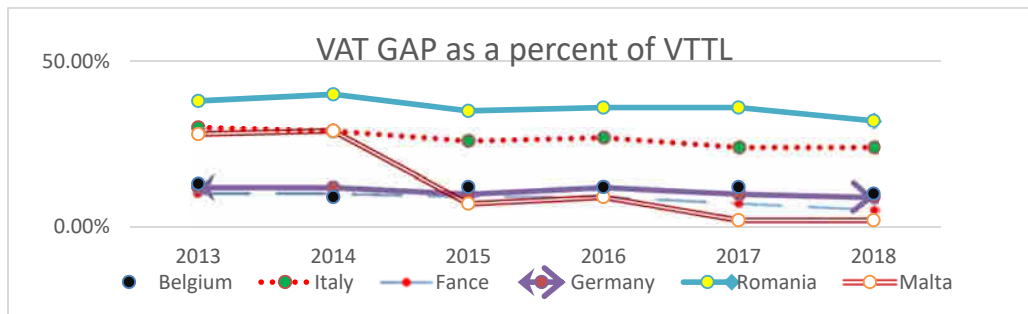


Fig. no. 1 VAT deficit (%)

Source: own, according to data presented in the TAXUD 2019 Report

Of those presented the highest VAT rate in the analysis of the six mentioned states, Italy holds (22%), followed by Belgium (21%), France (20%), Germany (19%), Romania (24% -19%), Malta (18%). These data show that the gap between VAT rates applied at EU level is not so different between developed and emerging states and represents "a step towards harmonization"(Vladetal,2018).According to the TAXUD 2019 report, all the mentioned states had difficulties in collecting VAT and these led to different results of VAT deficits in the period 2013-2018, from 2% in Malta, to 35.5% in Romania. Romania has the largest deficit in VAT, the emerging state, and the smallest recorded VAT deficit is registered in France and Germany. Malta had a promising circuit, managing to go from 28% (2013) to 2% VAT deficit (2018). In conclusion, we cannot say that there is a directly proportional relationship between VAT rates and the VAT deficit.

Conclusions

Fiscal pressure and payment of taxes is an important issue for individuals and legal entities for the members of the European Union. The presentation of the article has shown that a developed national economy can be granted, the gross domestic product is reported, the high taxes are levied, or a higher general fiscal pressure is ratified, to the detriment of the emerging states, with a lower tax rate. Following the verifications it was found that modifications can be made in Romania and in Malta. Several moderates are being supported for fiscal pressure, in order to overcome the conditions in the European countries. The decrease of VAT rates in Romania and Malta has had many positive results, especially for Malta, observing or improving at a level of fiscal pressure for cats and effective VAT groups.

At the same time, this article presented the efficiency of VAT collection in the period 1998-2018, where it was shown that the degree of economic development is indeed a fundamental feature in quantifying public finances, because they underline the efficiency of the state intervention in the economy. This could be demonstrated on the basis of the collection

efficiency index, which shows the value of the value added tax and the importance of the supportability of the natural or legal persons, but also the degree of influence of the tax rates. An important conclusion that came to the end of the article is that the level of the standard VAT rate does not guarantee the influence of the deficit in a certain interval. However, we cannot deny that a lower VAT rate also implies a lower risk of losing revenue from this source. It can be said that the level of quotas is not the one that mainly influences the state VAT collection rate, because the deficits are the result of the interaction of several factors, such as: the events of the companies with an impact on the VAT collection on the budget - such as bankruptcy - insolvency, organization of the system of VAT. tax administration, tax fraud, VAT exemptions used abusively, etc., external factors that need to be studied separately.

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DETERMINING INTERNATIONAL COMPETITIVENESS THROUGH COMPARATIVE ADVANTAGE AT REGIONAL LEVEL – INSTRUMENT IN DESIGNING REGIONAL STRATEGY. STUDY CASE: CENTRAL REGION, ROMANIA

Ionela Gavrilă-Paven¹

¹1 Decembrie 1918 University of Alba Iulia, Romania

E-mail: ionelapaven@yahoo.com

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Abstract

Internationally, Romania holds both good and weak positions in the European Competitiveness Report, with a strong concentration of strengths and weaknesses on the manufacturing and services sectors. Integration into the EU and total openness to the Member States have put Romanian economy in a position to cope with the pressures of the single market as well as with the global market competition. Despite the economic crisis of 2008-2010, the EU continued to have a number of comparative advantages on the world market, in about two thirds of the industrial sectors, which account for about three quarters of the added value. The study aims to analyze the advantages of the Central Region at national level. Analysis of the comparative advantage at regional level highlights the performances achieved at regional level by main groups of goods during 2011-2016. For calculating of the comparative advantage, the article presents the indirect method based on the trade flows structure by determining relative export performance and relative import-export performance. The analysis is based on the positive results obtained at national level by the Central Region, being the single Romanian region that recorded a positive result for the balance trade for the analyzed period. The study highlights a distinct regional development for the Central Region, which does not fully follow the tendency registered at national level. The author intends to confirm the comparative advantage held by Central Region by using both methods, validating in this manner an instrument for designing regional development strategies. The competitive sectors can be determined in an objective way, validated by the commercial flows and their evolution.

Keywords

revealed comparative advantage, relative export performance, relative import-export performance, regional development strategies

JEL Classification

O11, N70

Introduction

Integration into European Union, combined with the globalization process that affects all economies, generated changes for the Romanian economy. Economic development and internationalization of companies have to be considered in the conditions of a more intense competition, in the framework of international dimensions of market and the pressure of foreign investors on the regional and national markets. International dimensions of the competition generate new challenges for the companies participating in international trade. Considering these challenges, it is relevant to determine the competitiveness at regional level for each country in order to support the regional development policy and to create or adjust financial support instruments in order to maximize regional performances in international trade. Regional development strategies are designed in order to maximize the strengths and opportunities for each region, at national level. To support economic specialization at regional level, there has to be identified the competitive sectors. Regions, in which there were identified comparative advantages, have to be analyzed through the perspective of the number of the competitive sectors and the evolution of economic growth. In order to support macroeconomic decisions and to have a feedback regarding the implemented policies, there has to be determined at regional level (combined with county level) the revealed comparative advantage and to analyze its evolution in time.

Literature review

Absolute advantage supported by Adam Smith in the 18th century was based on the idea that one country should import goods that can be bought in lower price than the price that would be generated by producing the same goods with its own resources (Smith, 1776). This idea is based on international labor specialization that generates production of quality goods in low costs, respectively the basis for international trade. Determination of the comparative advantage was introduced by David Ricardo, in the beginning of 19th century. Comparative advantage refers to the principles according to which each country is specialized in producing and exporting the goods obtained with lower relative costs, namely more efficiently compared to other countries (Udrescu, 2012). International trade stimulated global production, by allowing the countries to be specialized in commodities for which they have comparative advantages (Krugman and Obstfeld, 2003). Considering this theory, one country can benefit by trade even if it does not have absolute advantage in production of any commodity. It has to have a relative advantage in producing a selected commodity that is able to export it. Thus, in this theory it is not compared the level of unit costs of manufacturing the same commodity in two countries, but it is compared the ratio of unit costs of manufacturing two selected products in two countries (Szczepaniak, 2018). Ricardian theory was verified in different analyzes conducted and studying international trade between two or more countries (MacDougall, 1951; Stern, 1962; Balassa, 1963; Budnikowski, 2017). Recent theories underlined the importance of increasing returns to scale and product differentiation to support intra-industry trade (Krugman; 1979, 1980, 1991; Bosa and Lu Zhang; 2012). The latest studies regarding competitive advantages are considering the importance of following factors: technological level, innovation, quality of products, including after sell services. Approaching the competitiveness through sustainable development strategy, supposes to observe also the efforts regarding the environment protection and the rational use of the non regenerating resources (Coenen, Lopez and Diaz, 2010; Rodríguez, 2012; Schwab, 2012). The analyze conducted in this study is based on the Balassa comparative advantage developed for identifying the competitive types of commodities that consolidate one country position to compete in international trade, even the commodities do not offer high profitability (Guzek, 2004). It has been developed the theory that comparative advantages can be competitive advantages (Misala, 2011). Nowadays, the theory of Balassa according with the methods of studying comparative advantages proposed, represents the starting point of international

competitiveness research in the area of foreign trade. Despite the unquestionable qualities of the theory of comparative costs, due to the complexity of processes occurring in the contemporary economy, it is not possible to present the directions and intensity of changes in trade flows using only one theory of international trade (Szczepaniak, 2018). Considering the development strategies of the countries, the regional strategies should consider the comparative advantage in order to maximize at regional and national level the resources of that country.

Romanian comparative advantages – motivation for regional analysis

Internationally, Romania occupies both good and weak positions in the European Competitiveness Report ranking, with a quite pronounced concentration of strengths and weaknesses in the manufacturing and services areas. Integration into the EU and total openness towards the Member States has put Romanian economy in a position to cope with both the pressures of the single market and the competition on the world market. Despite the economic crisis of 2008-2010, the EU continued to have a number of comparative advantages on the world market, in about two thirds of the industrial sectors, which hold about three quarters of the added value. The advantages are concentrated in products with a high degree of sophistication and knowledge intensity, with the observation that the EU has a broader internal base of high-tech chains than the US, China or Japan.

Paradoxically, given the natural potential, the population employed in agriculture and the relatively low level of pay, Romania has a low comparative advantage index in this sector. Neighboring countries Bulgaria and Hungary are much more competitive, which explains the cross-border supply systematically made by inhabitants of the big Romanian cities from the respective borders. At the opposite end, the most competitive fields in international comparisons are represented by the tobacco industry and wood, respectively wood products (but with a low level of processing), the index of comparative advantage for these sectors being 5.81, respectively 4.86, according to the European Competitiveness Report from 2014 (European Competitiveness Report, 2014). The index for furniture type products is lower, but nonetheless at a high level, 3.62 respectively, highlights this area's potential for the Romanian economy. In textiles, clothing, leather and footwear, Romania has a competitive manufacturing industry, a fact reflected by relatively high values of the comparative advantage index (tending to 2 for certain areas). These fields are supplemented by metal products and electrical equipment that record above-unitary indices. The year 2016 was on the trend of accentuating the current account deficit started in 2014, against the background of the deterioration of the balance of goods and primary incomes. Structural analysis of the balance of the trade balance, on groups of products from the Combined Nomenclature show deficits for: chemicals and plastics (5950 million euros), common metals (1908 million euros), mineral products (1742 million euros), textiles, clothing, footwear (1053 million euros), agro-food products (710 million euros), respectively surplus in: machinery, apparatus, equipment and means of transport (1563 million euros), wood products, paper (383 million euros) and other goods (185 million euros). By geographical area, the deficit in the balance of goods was generated almost entirely by intra-community trade (97.6 percent), the extra-community trade having an influence of only 2.4 percent.

Research methodology

To determine the revealed comparative advantage is used the indirect method based on the structure of the commercial flows, proposed by Belassa (1965). According to this method, starting from the structure of commercial flows, one identifies the product groups for which there is a comparative advantage. For calculating the comparative advantage, there are determined two indices: relative export performance and relative import-export performance. The analyze determines first the comparative advantage held by Central Region by using both

methods, determining the competitive groups of good at national level. The competitive sectors are determined in an objective way, being validated by the commercial flows and their evolution at national level. The analyze will continue with the determination of comparative advantage at county level, for counties of Central Region in order to identify in territory the competitive potential and to validate the decisions in supporting at county and regional level the investments strategies and the financial allocation that aim to support economic development.

The relative export performance at regional and county level is determined as follows:

$$RCA_{\text{Regional}} = (X_{ri} / X_{ni}) : (X_r / X_n) \quad (1)$$

where: X_{ri} – the regional export for the i group of goods;

X_{ni} – the national export for the i group of goods;

X_r – regional export; X_n – national export.

$$RCA_{\text{County}} = (X_{ci} / X_{ri}) : (X_c / X_r) \quad (2)$$

where: X_{ci} – the county export for the i group of goods;

X_{ri} – the regional export for the i group of goods;

X_c – county export; X_r – regional export.

According to this method, the region, respectively the county, has a comparative advantage over the national/regional level for a certain category of goods i , if this index is greater than 1. The higher the index than 1, the more the comparative advantage is picked up. If the index has values between 0 and 1, it means that for the specific group of goods, the respective region/county has no comparative advantage.

The relative import-export performance at regional and county level is determined as follows:

$$RCA_{\text{Regional}} = (X_{ri} / X_{ni}) : (M_{ri} / M_{ni}) \quad (3)$$

where: X_{ri} – the regional exports for the i group of goods;

X_{ni} – the national exports for the i group of goods;

M_{ri} – the regional imports for the i group of goods;

M_{ni} – the national imports for the i group of goods.

$$RCA_{\text{County}} = (X_{ci} / X_{ri}) : (M_{ci} / M_{ri}) \quad (4)$$

where: X_{ci} – the county exports for the i group of goods;

X_{ri} – the regional exports for the i group of goods;

M_{ci} – the county imports for the i group of goods;

M_{ri} – the regional imports for the i group of goods.

According to this method, in determining the comparative advantage both the supply (exports) and the demand (imports) are taken into account by groups of goods at regional and county level. Like the previous indicator, if it is positive, but smaller than 1, it means that the region/county analyzed has no comparative advantage over the national/regional level for a certain category of goods. If the index value is greater than 1, then there is a comparative advantage, the greater the value compared to 1, the higher the index, the bigger the advantage.

Results, conclusions and discussions

The analysis of the comparative advantage using the methods presented above, reveals the competitive categories of goods for Central Region. The detailed data for central Region are presented in Table no. 1. The indices determined through both methods revealed the following categories of goods: (1) the VIII and IX groups, respectively raw skins, tanned leathers, furs and products thereof and wood products, exclusively furniture, which have the highest level of the indicator (over 3) and a relatively constant trend during the period analyzed 2011-2016; a similar level for wood products is registered at the North-East Region level; (2) these groups are followed, from the perspective of the analyzed indicators, by groups X, XI and XIII, with values close to 2; similar values for these groups are recorded in the North-East, South and South-East regions; (3) the groups of goods for which the Central Region has a comparative advantage at the national level (a level of the indicators calculated over 1), during the analyzed

period, are: I, VI, XII and XVI. Similar values for the same product groups are recorded in the neighboring West and North-West regions. At the opposite pole, in the category of goods for which the Central Region has low levels of the analyzed indicators, the following categories of goods are observed: II, III, IV, V, VII, XV and XVII.

Table no. 1. Comparative Advantage determined for Central Region compared with national level according (using equation (1) and (3))

Category	2011 (1)	2012 (1)	2013 (1)	2014 (1)	2015 (1)	2016 (1)	2011 (3)	2012 (3)	2013 (3)	2014 (3)	2015 (3)	2016 (3)
I.	1.1520	1.1785	1.3424	1.4523	1.2981	1.1500	0.8527	0.9674	1.0725	1.2379	1.1217	1.0105
II.	0.0869	0.0830	0.0714	0.0580	0.0570	0.0596	0.1890	0.1838	0.1640	0.1122	0.1339	0.1562
III.	0.0972	0.0677	0.0822	0.0531	0.0104	0.0050	0.6034	0.4477	0.4003	0.2499	0.0658	0.0209
IV.	0.2026	0.2921	0.3114	0.2344	0.1725	0.2021	0.7431	1.2247	1.1353	0.8249	0.6788	0.7563
V.	0.0494	0.0421	0.0548	0.0666	0.0815	0.0901	0.1112	0.0858	0.2118	0.4376	0.5310	0.2500
VI.	1.4276	1.3995	1.3996	1.2541	1.3631	0.7007	1.5874	1.7823	1.5440	1.4614	1.7640	1.2337
VII.	0.5556	0.6066	0.6042	0.5726	0.5908	0.5742	0.6102	0.6437	0.6162	0.5587	0.5730	0.5671
VIII.	3.4496	3.6696	3.7194	3.5666	3.2508	2.9883	2.3827	2.5775	2.5143	2.4262	2.2563	2.2631
IX.	3.4779	3.3066	3.3182	3.1458	3.0658	2.9544	1.6086	1.4830	1.6327	1.5031	1.3839	1.3779
X.	1.8300	1.6332	1.6678	1.6372	1.7513	1.4251	2.0084	1.8220	1.7248	1.8898	2.0140	1.6151
XI.	1.6033	1.4002	1.2467	1.2395	1.1954	1.1082	1.2041	1.1959	1.1747	1.2004	1.1099	1.1339
XII.	1.1050	0.9618	1.0158	1.0095	1.0711	0.9789	1.6242	1.4843	1.6101	1.5734	1.4168	1.5927
XIII.	1.9784	1.9093	2.0302	1.8603	1.8969	1.6853	3.2439	3.1209	3.1753	3.0629	3.0211	3.1354
XV.	0.6273	0.6629	0.7040	0.7342	0.7339	0.8195	0.6528	0.7113	0.7656	0.7418	0.7197	0.7777
XVI.	1.0942	1.1728	1.1718	1.1818	1.2467	1.3055	1.5228	1.5286	1.4692	1.4424	1.4948	1.5267
XVII.	0.8449	0.8185	0.9253	1.0844	0.9281	1.0463	1.0962	1.0203	1.1284	1.3358	1.6799	1.9444
XVIII.	1.5965	1.0035	0.8086	0.6628	0.5501	0.3689	2.4143	1.1951	0.9688	0.8176	0.7602	0.4606
XX.	1.1321	1.0111	0.9267	0.8885	0.9620	0.9263	2.0884	2.0702	2.0842	2.0402	2.2800	2.4738
XXII.	1.0297	0.6851	0.8228	0.9934	0.9720	0.9760	0.9952	1.0600	1.0620	1.5678	1.8450	2.0974

Source: author's own computation based on imports and export available at www.insse.ro

Notation: I. Live animals and animal products, II. Vegetable products, III. Animal or vegetable fats, IV. Prepared foodstuffs, beverages and tobacco, V. Mineral products, VI. Products of the chemical industry, VII. Plastics, rubber and articles thereof, VIII. Raw hides and skins and leather, furs and manufactures thereof, IX. Wood products, excepting furniture, X. Paper and articles of paper, XI. Textiles and textile articles, XII. Footwear/headgear/umbrellas/walking/seat-sticks/whips/riding-crops, parts; prepared feathers/ articles; artificial flowers; articles of human hair, XIII. Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware, XV. Base metals and articles of base metal, XVI. Machinery/mechanical appliances; electrical equipment; parts; sound recorders/reproducers, tv image, sound recorders/reproducers, parts/accessories, XVII. Vehicles, aircraft, vessels and associated transport equipment, XVIII. Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof, XX. Miscellaneous manufactured articles, XXII. Goods non-included in Combined Nomenclature other sections

Corroborating the analysis with the evolution of main macroeconomic indicators, observing in detail the foreign trade activity at a regional level, for the Central Region in 2011-2016, for the two elements of import and export structure, it is relevant that the evolution was positive. It should be noted that the balance of the trade in the Central Region is positive, the exports are higher than the imports during the analyzed period, with a tendency to increase this balance. At regional level, Braşov county maintains a contribution of approximately one third in the total of the regional exports, followed closely by Sibiu, with a contribution of 30%, on average. The third place is occupied by Alba County with an average contribution of 15% followed closely by Mureş County with an average contribution of 12%. Modest contributions are coming from Covasna and Harghita with an average of 4% in regional exports.

The evolution is relatively similar in terms of imports, with minor exceptions. Braşov county owns approximately 36% of the regional imports, followed closely by the county of Sibiu, with an average of 28%. Thus, the share of imports is higher than the share of exports in the regional total for Braşov County, while for Sibiu County it is lower. The third place is occupied by the county of Mureş with an average contribution of 16% of the total of regional imports, followed by Alba county with an average contribution of 9%. Covasna and Harghita counties have lower contributions, with an average of 5% in the formation of regional imports, a higher contribution than the exports registered at the county level. These comparisons

regarding the structure of imports and exports and a correlation between them at regional level in order to determine the efficiency of the foreign trade activity at regional and county level, must be complemented by a careful analysis by commodity groups in order to establish the relevant comparative advantages at both regional and county levels, in order to be able to formulate proposals for future regional development directions (Table no. 2).

Table no. 2. Minimum and maximum values for Comparative Advantage determined for counties in Central Region (using equation (2) and (4) for 2010-2016)

Category	AB (2)	AB (4)	BV (2)	BV (4)	CV (2)	CV (4)	HR (2)	HR (4)	MS (2)	MS (4)	SB (2)	SB (4)
I.	0.94/1.34	0.57/0.91	0.81/1.20	0.86/1.20	6.10/8.50	4.50/12.0	0.36/1.77	0.36/1.49	0.51/0.84	0.20/0.32	0.21/0.41	0.98/1.98
II.	1.01/1.94	1.08/2.33	0.27/0.43	0.42/0.69	0.14/1.65	0.04/0.64	2.12/5.76	0.73/1.67	1.47/3.26	0.42/1.56	0.15/0.99	0.59/7.93
III.	0.22/2.17	0.79/5.73	0.69/2.24	1.50/5.32	0.00/2.64	0.00/1.16	0.01/7.19	0.00/0.96	0.15/1.09	0.18/0.58	0.04/0.45	0.06/0.63
IV.	1.46/2.44	2.28/4.13	0.58/0.94	0.84/1.28	0.33/2.77	0.25/1.78	1.61/2.55	0.31/0.51	0.78/1.68	0.34/0.99	0.55/0.74	1.03/1.59
V.	0.01/0.18	0.01/1.98	1.57/2.65	2.19/10.67	0.01/0.31	0.01/3.47	0.11/0.76	0.52/6.31	0.01/0.41	0.01/0.08	0.25/1.16	0.31/3.25
VI.	0.17/0.44	0.29/0.80	0.38/1.14	0.33/0.89	0.02/0.11	0.06/0.46	0.06/0.23	0.07/0.45	4.12/6.86	1.67/3.40	0.05/0.54	0.16/0.82
VII.	0.61/1.15	1.77/3.60	1.44/1.61	1.33/1.66	0.86/1.10	0.36/0.53	0.59/0.98	0.27/0.48	0.43/0.75	0.31/0.54	0.58/0.71	0.67/0.81
VIII.	0.46/0.78	0.75/1.22	0.10/0.31	0.15/0.38	0.01/0.04	0.08/0.39	0.71/0.98	0.91/1.30	0.36/0.45	0.55/0.84	2.38/2.70	1.34/1.44
IX.	3.51/4.31	1.17/2.08	0.53/0.60	0.41/0.61	0.27/0.54	0.67/1.31	1.12/2.01	1.17/1.56	0.57/1.14	1.14/3.27	0.05/0.11	0.31/0.50
X.	2.43/3.05	0.98/1.61	0.44/0.66	0.94/1.45	0.27/0.34	0.09/0.56	4.17/7.38	0.94/1.48	0.07/0.27	0.11/0.23	0.30/0.47	0.75/1.28
XI.	0.41/0.56	0.92/1.13	0.40/0.56	0.54/0.78	4.08/6.41	1.37/1.83	3.02/4.15	1.13/1.38	0.92/1.36	0.72/1.09	0.67/1.10	0.96/1.04
XII.	1.76/2.30	1.05/1.22	0.83/1.10	1.22/1.63	0.00/0.12	0.00/1.72	0.21/1.75	0.23/0.69	0.70/1.09	0.68/0.93	0.62/0.77	0.65/0.89
XIII.	2.93/4.20	2.51/3.71	0.10/0.18	0.12/0.18	0.85/1.17	0.71/1.15	0.07/0.41	0.04/0.30	2.07/2.63	2.32/3.33	0.20/0.42	0.25/0.38
XV.	0.20/0.32	0.39/0.76	1.35/1.61	1.11/1.40	0.22/0.49	0.42/0.92	0.56/0.90	0.33/0.63	0.58/1.32	0.51/1.18	0.83/1.14	0.99/1.12
XVI.	0.36/0.46	0.60/1.50	0.96/1.06	0.94/1.07	0.35/0.81	0.47/0.90	0.07/0.24	0.12/0.36	0.58/0.76	0.67/1.15	1.57/1.64	1.01/1.19
XVII.	0.04/1.39	0.21/1.35	1.57/2.13	0.88/1.15	0.20/0.32	0.24/0.64	0.23/0.59	0.22/0.87	0.26/0.36	0.28/0.53	0.59/1.10	1.14/3.04
XVIII.	0.05/2.21	0.27/2.19	0.68/0.87	0.70/1.28	0.20/0.58	0.06/0.59	0.19/0.41	0.24/0.40	1.48/2.84	0.97/2.56	0.55/1.73	0.62/1.52
XX.	0.94/1.14	1.48/2.15	0.20/0.45	0.20/0.50	0.90/1.09	0.41/0.56	3.76/4.17	1.63/1.86	2.00/2.23	1.05/1.40	0.64/1.16	0.97/1.98
XXII.	1.59/4.62	3.62/7.66	0.60/1.21	0.94/1.53	0.00/0.11	0.01/1.27	0.00/0.25	0.00/0.67	0.82/2.49	0.26/0.59	0.03/0.27	0.09/1.17

Source: author's own computation based on imports and export available at www.insse.ro

Notation: Alba – AB, Braşov – BV, Covasna – CV, Harghita – HR, Mureş – MS, Sibiu – SB.

The results calculated both at the regional and county level, aim to determine the comparative advantages of the Central Region at the national level, and at the county level, to identify the comparative advantages of the counties within the Center Region. Surprisingly, although for first two categories, I and II, Romanian economy is not competitive at international level, still for the first category Central Region is competitive at national level (confirmed through the results obtained for all indices). Deepening the analysis on the counties of Central Region, there can be observed that county Covasna records high level of the indices (according to both methods of calculating), compared to the modest results obtained for the other counties. Practically, the competitiveness of the Central Region for group I is determined by Covasna county. For the second group and II, Central Region is not competitive at national level, but the territorial analysis reveals high level of the indices calculated according to first method for Harghita and Mureş counties, that reveals the performance of exports for vegetable products. But the results are not being confirmed according to the results for the second method, which means that these results show competitiveness at small scale, but at national level, according to the large amount of the imports for this category, the advantage is lost. Situation is similar for III and IV groups. Although at regional level the indices do not show relevant comparative advantages, still, the counties analysis reveals performances for group III. Animal and vegetable for Harghita county, for export performance (first method), but not for the import-export performance (second method). Relevance for import-export performance is being shown for Alba and Braşov counties, but not confirmed in terms of export performance. Situation is similar for group IV, for which Harghita county has relative export performance, while Alba county has relative import-export performance. For group V although Central Region is not competitive at national level, still, Braşov county records high values both for export performance and import-export performance. Similar results are recorded also for group VII, where Mureş county has relative export performance,

while Alba county has relative import-export performance, in the framework in which Central Region is not competitive at national level. Central Region is being competitive at national level for VI, confirmed by the analysis for Mureş county through both methods. Mureş county records a tradition in this area, together with human resources trained in this area and investments made. For the next two groups VIII and IX, Central Region is being competitive at national level according to both methods, recording values over 2. For group VIII, Sibiu county has relative export and import-export performance, while Harghita county gains relative import-export performance, with good perspectives for development. For IX Alba and Harghita counties are confirmed by both methods, while Mureş county is gaining relative import-export performance. Groups X and XI are confirmed as competitive at national level for Central Region, but high performances are being recorded by Alba and Harghita counties for paper and articles of paper, respectively Covasna and Harghita counties for textiles and textile articles. Relative export performance for textiles and textile articles is being recorded also by Mureş county. Central Region is being competitive for group XII confirmed at county level for Alba and Mureş counties for relative export performance and Alba and Braşov counties for relative import-export performance. High level of competitiveness at national is recorded for group XIII, confirmed through both methods at regional level and county level for Alba and Mureş counties. Similar results are recorded also for group XVI. Although at national level, Central Region has no comparative advantages, still at regional level, groups XV and XVII records comparative advantages for Braşov and Sibiu counties, being sectors supported at regional level. Similar situation is recorded also for XVIII, where Mureş county outstands with its performances.

Overall, the analysis shows the strengths and opportunities for future development for each region, according with the group of goods that are not competitive both at national and regional level. This information should be considered by the stakeholders that are designing and preparing the financial instruments for regional development together with the main objective for future development and connections with national development strategy and strategic documents for competitiveness. In general, the two calculation methods lead to approximately the same results. The discrepancies may occur when there are significant differences between the two levels analyzed (region / county and country / region) in terms of policy measures in the commercial field, but also in consumer preferences.

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BEST PRACTICES OF NONGOVERNMENTAL ORGANISATIONS IN COMBATTING COVID-19

Marcela-Sefora Nemțeanu¹ and Dan-Cristian Dabija²

¹⁾²⁾ Babeș-Bolyai University Cluj-Napoca, Romania

E-mail: seforasana@gmail.com; E-mail: cristian.dabija@econ.ubbcluj.ro

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Abstract:

Against the backdrop of socio-economic crises, nongovernmental organisations (NGOs) have proven their essential role in supporting vulnerable categories within communities. The COVID-19 pandemic pushes the boundaries of the medical system and its limitations, thus causing an unprecedented case of social distancing, elevating rates of stress and depression among the population, and contributing to high levels of anxiety regarding the provision of necessary resources to secure a livelihood, respectively. In the context of this pandemic, evaluating the best practices of NGOs and redefining their relationship with public institutions may provide solutions for the sustainability of local communities. Based on Resource Dependence Theory applied by NGOs, this research plans to emphasize the humanitarian initiatives undertaken during socio-economic crises. Salient best practices supporting the strategy to combat the effects of COVID-19 pandemic were analysed from a managerial standpoint.

Keywords: Nongovernmental organization (NGO), Best practices of NGOs, COVID-19 in Romania, Resource Dependence Theory, Humanitarian Aid COVID-19

JEL Classification: A13, L31, I18

Introduction

The outbreak of the COVID-10 was first identified on 12 December 2019 in Wuhan, and since then the virus has been spreading around the world (WHO, 2020). At present, there are over 2,064,815 confirmed cases and 137,078 deaths – the number of cases continues to increase (Google COVID-19, 2020). This unprecedented situation engendered the swift collapse of many medical systems. Combatting the COVID-19 pandemic entails the distribution and implementation of the best available practices to support employees from the medical and social protection system, the unemployed, but especially socially vulnerable groups, such as the elderly and people with pre-existing medical conditions (OECD, 2020). Since 27 February 2020, when Romania recorded its first case, until 12 April 2020, there have been 7,216

confirmed cases and 372 deaths (Google COVID-19, 2020). The main measures adopted nationwide are public information campaigns, population testing, quarantine, and isolation (MSR, 2020). Schwartz and Yen (2017) point out a connection between sustainable development and socio-economic crises, highlighting the direct role of nongovernmental organizations (NGOs) in offering support to various vulnerable groups. In practice, NGOs are entities which, in extreme situations, can provide vulnerable groups with the material and human resources needed in overcoming adversity (Prasad et al., 2016; Schwartz and Yen, 2017). In this manner, the NGO becomes a key stakeholder between public institutions and the population (Portney and Cuttler, 2010). The NGO is both a relevant resource provider for public institutions and an active participant supporting vulnerable groups and ensuring their access to necessary resources. The literature is extremely scarce regarding the role of NGOs as resource provider during socio-economic crises, although practical examples and recent situations clearly indicate the existence of such a connection.

The aim of the research is to identify the best practices of NGOs that help to combat the COVID-19 crisis and to support the public medical system on an emergent market – Romania. Based on the Resource Dependence Theory, the authors underline the role and responsibilities of NGOs in a crisis such as a pandemic. At the same time, the authors underline some of the best practices employed by NGOs in Romania. Finally, recommendations are put forward, which can be extrapolated to other relevant markets.

1. Literature review

1.1. The role of nongovernmental organizations in contemporary society

Academic research acknowledges the role of NGOs in providing social and humanitarian aid (Salamon, 1987; Atouba and Shumate, 2020) especially to domains in which the government or the market admit failure (Weisbrod, 1975). Volunteer Failure Theory considers the non-profit sector of utmost importance in terms of disaster intervention, also highlighting the dependence of NGOs on public funding (Salamon, 1987), without which they cannot achieve their goal.

Contemporary global challenges and the growing interest for sustainable development in the social domain highlight important role of NGOs in human development (Ceptureanu et al., 2018). Bromley and Mayer (2017) show that boundaries between the non-profit, the public, and the competitive sector are not always clearly delineated. Organisations are oftentimes involved in offering humanitarian aid through strategies of corporate social accountability (Ballestros and Gatignon, 2019). Moreover, in crisis situations, the need of collaborative involvement between institutions and NGOs is self-evident (Schwartz and Yen, 2017), and business practices are undertaken by NGOs to reach their objectives (Bromley and Mayer, 2017; Prasad et al., 2016).

1.2. Resource Dependence Theory implications in the domain of NGOs

Humanitarian aid initiatives have been previously studied from a Resource Dependence Theory standpoint (Prasad et al., 2016). The aim is to monitor the manner in which NGOs obtain the necessary resources to achieve their assumed mission or to support humanitarian causes (Prasad et al., 2016) due to the fact that, by its own structure, the NGO does not have sufficient resources to reach their goal (Salamon, 1987). This theory illustrates the manner in which organisations obtain and preserve resources (Pfeffer and Salancik, 1978). At the same time, this theory allows the research of the NGOs' reliance on the resources of other parties interested in fulfilling their mission and offering humanitarian aid, contributing to the understanding of operational processes from the perspective of a dependency relationship between NGOs, state institutions, business environment, and the community (Prasad et al., 2016). Communication (Lai and Fu, 2020) and organizational accountability through transparent reporting (Lai and Fu, 2020; Atouba and Shumate, 2020) contribute positively

towards the collaboration of the organisation and its stakeholders in obtaining the necessary resources.

1.3. Management processes in the involvement of resources relative to stakeholders

Management activities in supply chain humanitarian initiatives involve a variety of processes through which NGOs appeal to interested parties for the acquisition of resources (Prasad et al., 2016). Mutual humanitarian aid activities are represented by (a) fundraisers through individual donations (Bekkers and Wiepking, 2011), organisational donations (Ballestros and Gatignon, 2019), and public donations (Ceptureanu et al., 2018); (b) the supply of services and goods to vulnerable categories (Weisbrod, 1975; Salamon, 1987); (d) participation of volunteers (Nemțeanu and Tarcza, 2016; Touley and Hooks, 2020), and (e) public information campaigns through social marketing (Kotler and Lee, 2007). Management processes of humanitarian initiatives by NGOs corresponding to management activities are the following: communication (Lai and Fu, 2020), resource acquisition, resource distribution, reporting of results as a key element of NGO accountability (Kennedy, 2019). Communicating the mission of the NGO represents the main driver of resource acquisition for the achievement of assumed objectives. Volunteers as stakeholders are characteristic to the non-profit sector, and they are sensitive to the organisation's mission. The lack of legitimate actions and responsibilities of an organisation can determine the volunteers to abandon their involvement in various NGO activities (Touley and Hooks, 2020). Along with the content and legitimacy of the mission in the socio-economic context, communication means play an essential role. The swift development of the Internet and easy access to information facilitate the development of the policy framework of NGOs, thus succeeding in increasing their audience and in addressing continuously more stakeholders. Social presence not only on websites but also on social media facilitates the communication of tailored humanitarian messages towards targeted stakeholder (Lai and Fu, 2020).

The development of Internet and smartphones has influenced over time the various methods employed for the attainment of financial resources necessary for the organisation's mission. Fundraising through mobile phones and Internet has contributed in recent years to a significant support for humanitarian causes, such as disease control, natural disasters, and humanitarian crises (Bellio, 2013).

Another tool employed by public institutions and NGOs to promote the adoption of new behaviours is social marketing, which has proven effective in public information campaigns, in combatting traffic accidents, consumption of alcohol, tobacco or drugs, along with other social issues (Kotler and Lee, 2007). Social marketing is a tool with direct positive implications in informing the population regarding the adoption of behaviours necessary for the prevention disease transmission (Pastrana and S, 2020).

The results of humanitarian and social initiatives of NGOs in crisis situations are important both to beneficiaries (Prasad et al., 2016) and the resource providers (Lai and Fu, 2020). Such results are countless, varying significantly due to their cause: monetary donations, donation of goods (Bekkers and Wiepking, 2011), supply of services and goods where the state cannot intervene (Weibross, 1975; Salamon, 1987), participation of volunteers (Nemțeanu and Tarcza, 2016; Touley and Hooks, 2020), etc.

The accountability of non-profit organisations shows high impact in relation to the interested parties (Lai and Fu, 2020). For instance, volunteers tend to get involved long-term in an organisation only if they trust the leadership, their activities and mission (Nemțeanu and Tarcza, 2016). The lack of transparency in reporting may raise serious questions among stakeholders (Lai and Fu, 2020; Atouba and Shumate, 2020). Due to the particularities of the undertaken operations, humanitarian organisations often fight against the issue of managing requirements concerning reporting accountability (Kennedy, 2019). The collaboration of NGOs with interested parties is conditional on their trust with the implemented actions

(Atouba and Shumate, 2020), where transparent communication regarding resource use constitutes the basis of their relationship.

2. Research methodology

This research proposes to identify the best practices in the non-profit sector in Romania against the backdrop of the COVID-19 pandemic. In this respect, the authors have analysed secondary data of NGO involvement in various humanitarian campaigns. They have employed both available online sources (the websites of various NGOs, public social media accounts, online mass-media publication, etc.) regarding the topic under scrutiny, and official data provided by public institutions, the NGO Database by the Romanian Ministry of Justice (MJR, 2020). Since the confirmation of the first case in Romania on 27 February 2020 (WHO, 2020), and until 13 April 2020, 60 such NGO initiatives have been identified.

2.1. Research context: COVID-19 and the non-governmental sector in Romania

In crisis situations, in emerging economies, the welfare of people from socially vulnerable categories depends on the resources made available to them through NGOs (Prasad et al., 2016). This research analyses the social initiative of NGOs in Romania as an emergent economy belonging to Central and Eastern Europe and which recorded a rapid economic growth in recent years (Dabija and Bejan, 2018).

Table no. 1 The COVID-19 impact on Central and Eastern European countries

Country	Population (millions)	Confirmed	Morbidity rate	Deaths	Fatality rate	Recovered	Recovery rate
(1)	(2)	(3)	(4)=(3)/(2)	(5)	(6)= (5)/(2)	(7)	(8)= (7)/(2)
Albania	2,877,797	494	0.01716591	25	0.0008687	251	0.00872195
Bulgaria	6,948,445	783	0.01126871	36	0.0005181	105	0.00151113
Croatia	4,105,267	1,741	0.04240893	33	0.0008038	473	0.01152178
Czech R.	10,708,981	6,301	0.05883846	166	0.0015501	819	0.00764779
Estonia	1,326,535	1,400	0.10553811	35	0.0026385	117	0.00881997
Hungary	9,660,351	1,579	0.01634516	134	0.0013871	192	0.00198751
Latvia	1,886,198	666	0.03530912	5	0.0002651	44	0.00233273
Lithuania	2,722,289	1,091	0.04007657	30	0.001102	138	0.00506926
Poland	37,846,611	7,582	0.0200335	286	0.0007557	668	0.00176502
Romania	19,237,691	7,216	0.0375097	372	0.0019337	1,217	0.00632612
Slovakia	5,459,642	863	0.0158069	2	0.0000366	151	0.00276575
Moldova	4,033,963	2,049	0.05079372	44	0.0010907	171	0.00423901
Serbia	8,737,371	4,873	0.05577192	99	0.0011331	400	0.00457804
Ukraine	43,733,762	3,764	0.00860662	108	0.0002469	143	0.00032698

Source: Google COVID-19, 2020; Worldometer, 2020.

In 2020, against the backdrop of the COVID-19 pandemic, Romania ranked first in terms of fatality rate and number of deaths per population. As for the number of infections, it ranks second with a relatively large number of cases compared with other Central and Eastern European countries (table no. 1), according to the OEDC (2020) definition, but also in relation to other neighbouring states (Serbia, Hungary, Ukraine, Moldova).

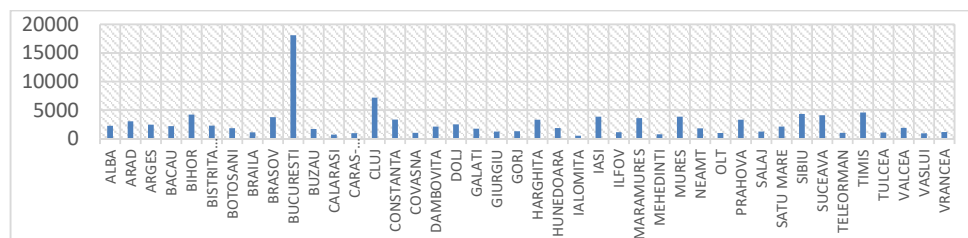


Fig. no. 1 Distribution of NGOs across counties in Romania (N=119.430)

Source: Analysis based on data from the NGO Database, MJR, 2020

The non-profit sector in Romania experienced a significant growth in the past 30 years, totalling 119,430 foundations, associations, unions, and federations (MJR, 2020). The previous report shows that București-Ilfov, the North Western and the Central region amass 55% of the non-profit organisations active in Romania, regions with the highest GDP in the country. The non-profit sector in Romania is preponderantly urban; 75% of non-profit organisations were located in the urban environment in 2015 (Andersen et al., 2017). The analysis of data due in the month of March 2020 (figure no. 1) show a conglomeration around large urban centres: București-Ilfov total over 18,093 NGOs, and Cluj 7,185 NGOs. In other regions, the number of NGOs is below 1,000 per county (Ialomița: 585; Călărași: 728, etc.).

2.2. Best practices of NGOs in Romania assisting in the fight against the COVID-19 pandemic

The initiatives identified assisting the fight against COVID-19 were undertaken by organisations within various fields – organisations within philanthropy, social care, and healthcare (table no. 2). Organisations belonging to a wide range of domains, from organisations with nationwide to local coverage, from urban to rural areas, took part in the combatting of COVID-19.

Table no. 2 Fields of activity and geographic distribution of support initiatives of non-profit organisations against COVID-19 (N=60)

Field of activity	Organisations in total	Field of activity	Organisations in total	Operating level	Organisations in total
Healthcare	10	Civic involvement	4	National	6
Social care	14	Psychotherapy	2	County	15
Philanthropy	26	Other categories	4	Local	29

Source: Analysis done by authors.

The messages conveyed by the interested parties regarding the resource attraction through social media and own websites, or third-party websites, revolve around two main topics (Table 3): supporting public hospitals and supporting the community. The call to action regarding the involvement of interested parties took into consideration results that involve donations, volunteering, supply of free services, population information campaigns, and the development of technological infrastructure.

Against the backdrop of COVID-19, 61% of the analysed organisations proposed initiatives to support public hospitals, thus actively supplying the necessary resources for the smooth conduct of healthcare workers. Among the undertaken activities, the following are noteworthy: supporting public hospitals through the donation of protective medical gear and disinfectants (46.66%), supplying the medical equipment (35%) needed to manage the confirmed cases of COVID-19; setting up hospitals (8.33%) in such a manner as to expand their full capacity for treatment, should the number of patients increase. Community support comprises the assistance of categories which are socially vulnerable to COVID-19, such as the elderly over 65, but also people with other chronic conditions or who cannot travel (MSR, 2020). With the help of volunteers, NGOs support these people with food, hygiene products or medicine (28.33%); donations of food supplies (25%), psychological consultations (13.33%), and medical consultations (6.66%). Singular initiatives are noteworthy, such as app development for medical staff who can easily find accommodation during the pandemic, and technology development that facilitates access of other organisations to resources and potential beneficiaries.

Public information campaigns by NGOs analysed in relation to COVID-19 effects have not been used extensively (16.66%), neither reference material posted online warning individuals regarding the risk to which the expose themselves (table no. 3).

Table no. 3 Best practices in humanitarian initiatives of NGOs (N=60)

Ref. no.	Dimensions	Frequency (%)	Best practices (targeted results)	No.	Frequency (%)
1.	Message conveyed: supporting public hospitals	61.6	Donations: protective medical gear and disinfectants	28	46.66
			Donations: medical equipment	21	35.00
			Donations: construction of modular hospitals	5	8.33
			Donation: combatting COVID-19	2	3.33
			Donations: meals for medical staff	1	1.66
			Donations: medicine	1	1.66
			Donation: line for biological sample testing	1	1.66
2.	Message conveyed: supporting the community	60.0	Donations: food supplies for vulnerable groups	15	25.00
			Donations: hygiene products	4	6.66
			Volunteering: delivering food supplies, hygiene products or medicine	1	1.66
			Free psychological consultations	17	28.33
			Medical consultations	8	13.33
			Providing free shipping	4	6.66
			Searching for temporary shelter	2	3.33
			Educational services for children	1	1.66
			Elderly care services	1	1.66
			App for facilitating psychological counselling	1	1.66
			Infrastructure for facilitating the access organisations to resources and beneficiaries	1	1.66
3.	Message conveyed: COVID-19 public information	16.66	General information regarding COVID-19 on the website	9	15.00
			Electronic book on COVID-19	1	1.66
4.	RAM: donations	58.33	Bank transfer	26	43.33
			Website: card payment	22	36.60
			Phone: SMS	24	40.00
			Phone app: Revolut	2	3.33
			Paypal	6	10.00
			Facebook: card payment	1	1.66
			Other apps	2	3.33
5.	RAM: volunteering	28.33	Social media (Facebook)	13	21.66
			Own websites	10	16.66
			Third-party websites	4	6.66
6.	Organizational accountability through reporting	51.66	Transparent reporting	18	30.00
			Information regarding resource destination	13	21.66
			Lack of reporting	29	48.33

Note: RAM – Resource Attraction Means.

Source: Analysis done by authors.

The main resource attraction means consist of online payment methods, such as bank transfer (43%) and text messages (40%). 36% of the organisations analysed raise funds through card payments on the own websites. Organizational accountability towards stakeholders was evaluated through the amount of information given regarding resource destination and use. It is noteworthy (table no. 3) that only 30% of organisations provided full reports regarding the funds raised and voluntary participation. 21% specified the destination of donations or the voluntary participation while 48.33% did not report on the solicited contributions in assisting the fight against COVID-19.

Conclusions

The results of this research provide major input towards the development of Resource Dependence Theory, highlighting the manner in which NGOs, by resorting to volunteering

and fundraiser campaigns, obtain the resources necessary to assist socially vulnerable categories, such as the elderly and people with pre-existing medical conditions. The current backdrop of the COVID-19 pandemic engendered a quick response of countless NGOs to support these groups through practical and targeted actions. These endeavours show the role of non-profit organisations as provider and resource facilitator for different organisations, especially for public hospitals. At the same time, the catalytic role of these NGOs is self-evident in the tempering of relations between the state and individuals.

From a managerial standpoint, this research extracts a series of best practices used by NGOs in Romania in the fight against COVID-19. The swift response of the NGO, together with their ability to generate and handle resources necessary to various stakeholders, is commendable. Nevertheless, this research contains a series of limitations, such as only having taken the case of NGOs in Romania into consideration. Future research will be able to analyse not only qualitatively but also quantitatively the dimensions and especially the effects of the actions of these NGOs in emergent and developed states, highlighting the most effective and swift solutions. In the future, as a consequence of some extreme situations – such as the COVID-19 pandemic – the reporting process of NGO actions ought to be transparentized, and the development of tools that analyse the processes undertaken by these NGOs for the legitimization of social and humanitarian initiatives, respectively.

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ASSESSMENT OF THE ENVIRONMENTAL REPORTING PRACTICES OF THE COMPANIES INDEXED IN THE GRI DATABASE

Alexandra-Oana Marinescu¹

¹⁾ The Bucharest University of Economic Studies, Romania

E-mail: alexandra.marinescu@cig.ase.ro

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Abstract

Triple Bottom Line Reporting (TBL) is the initial framework for companies to consider non-financial reporting. The objective of this study is to investigate the quantity and quality of voluntary environmental information presentations in the sustainability reports of companies in Europe and Romania indexed on the official website of the Global Reporting Initiative (GRI). Therefore, to achieve this objective, the companies indexed on the official GRI website were analyzed. The research method used is based on granting scores for the level of compliance of the reports with a scoring grid developed based on the literature review. The case study revealed three types of isomorphism mechanisms: coercive, normative and mimetic, intending to develop sustainability reports. The study shows the potential of companies in Romania and companies in Europe indexed on the GRI website to have a high degree of compliance from a quantitative and qualitative point of view concerning the environmental reporting and to obtain performance by complying and aligning with the principles of the TBL conceptual framework and GRI.

Keywords

environmental reporting; sustainability reports; TBL; isomorphism; GRI

JEL Classification

M14

Introduction

In the last decade, the term TBL was used as a paradigm to assess the success of an organization. It is defined as a sustainability balance for three different aspects: environmental, social and economic as "the three legs of sustainability" (Newport et al., 2003). The TBL reporting is gradually gaining importance worldwide, being the result of economic factors based on the company's performance. A more practical definition of

sustainability principles focuses on the TBL concept in which organizations consider simultaneously their economic, social and environmental sustainability performance (Elkington, 2001). Thus, environmental reporting plays an important role in business costs and in the perception of stakeholders on the business. The aim of this study is to show whether the entities in Romania, as well as the analyzed companies in Europe, are geared to publish sustainability reports, in accordance with the TBL framework. The paper is structured as follows: in the second section, specialized literature is reviewed and further, the research methodology is presented. The fourth section analyzes quantitatively and qualitatively the communication of information on the natural environment, followed by a section of results and discussions. The last section contains the conclusions and limitations of this study, as well as future research directions.

Literature review

The world economy is constantly changing, as companies face global competition, technological innovations and increased regulations in response to financial and governance crises. The accountancy profession has challenged the traditional financial business reporting model, arguing that it does not adequately meet the information needs of stakeholders for assessing the past and future performance of a company (Flower, 2015). As a response to these concerns, corporate reporting is changing and voluntary reporting is increasing in order to provide more useful and transparent information. Social and environmental reporting (SEAR) has been a relevant topic in the academic literature (Gray et al., 1996). TBL is a reporting concept that describes the social, environmental and economic performance of companies derived from the Brundtland Report (Sridhar, 2012). TBL incorporates three dimensions of performance: social, environmental and financial. This differs from traditional (financial) reporting frameworks, therefore, include social and environmental reporting. Environmental reporting is one of the key parts of TBL reporting. Under this approach, known as TBL Reporting, the Global Reporting Initiative's (GRI) sustainability there have been developed reporting guidelines on global reporting initiative in order to assist "reporting organizations and their stakeholders in articulating and understanding the organization's contributions to sustainable development".

The institutional theory implies that organizations adopt management practices that are considered legitimate by others, irrespective of their real usefulness (Carpenter and Feroz, 2001) and explain accounting choices, the process of change or the interaction between practices (Dillard et al., 2004). Reporting practices can be disseminated to organizations by means of three mechanisms: coercive isomorphism, normative isomorphism, and mimetic isomorphism (DiMaggio and Powell, 1983). DiMaggio and Powell (1983), Jennings and Zandbergen, (1995), Milstein et al. (2002), Delmas and Peng (2002) define "coercive isomorphism" as a result of pressures imposed by the government, capital markets or society. "Normative isomorphism" is defined by DiMaggio and Powell (1983) and represents the pressures exerted by the profession and unregulated organizations. "Mimetic isomorphism" is the company's tendency to imitate best practices and helps entities gain legitimacy. The sustainability reports provide an overview of the organization in terms of its social activities and provide a supplement to the financial statements, giving information about a particular set of activities of the organization (Akisik and Gal, 2011). Sustainability reports reflect all ESG dimensions of sustainable performance, and their reliability, objectivity and credibility are affirmed by ISO certifications and the GRI Reporting Framework. Thus, the sustainability reports are focused on performance management within the organization and on the relationships with stakeholders (Thiel, 2020). ISO certifications defining the credibility of sustainability reports are the international standard. According to Ionașcu and Ionașcu, (2019), ISO 26000 is an "integrated thinking" in reporting corporate social responsibility. Therefore, the ISO 14000 Environmental Standard and ISO 26000 on

the disclosure of non-financial information, provide the reports with an external assurance on the credibility and legitimacy of the processes of efficient management and communication of the sustainable performance to all stakeholders. The purpose of this study is to investigate the quantity and quality of voluntary environmental disclosures in corporate sustainability reports in Europe and Romania, indexed on the official website of the Global Reporting Initiative (GRI). In Romania, the communication of non-financial aspects was voluntary until the appearance of Directive 2014/95 / EU, with applicability from January 1, 2017, and adopted by OMFP 1938/2016, that introduced the "Non-financial statement" in the annual reports. The reporting of non-financial information in Romania is characterized by a growing global influence, and the practices of non-financial reporting are closely linked to corporate sustainability. A research of KPMG (2017) showed that 74 companies out of N100 companies in Romania publish information on sustainable development. The current study shows the potential of companies in Romania and companies in Europe indexed on the GRI website to have a high degree of compliance from a quantitative and qualitative point of view regarding environmental reporting and to achieve performance by complying and aligning with the principles of the TBL and GRI conceptual framework. This research contributes to a better understanding of the practices of non-financial information reporting in terms of compliance with the TBL and GRI framework.

Research Methodology

The analyzed companies represent an initial sample of 11 companies (see Appendix no. 1) indexed in the database of the GRI Sustainability Reporting Standards (GRI Standards) and taking into account the information available on the websites of these entities. The selection process is based on five criteria: the companies must fall within the category of large companies; the companies must be part of the Europe region, countries: Romania, France and the United Kingdom of Great Britain; the companies must publish information in accordance with GRI 4 standards indicators; the companies must have sustainability reports for at least one year, respectively 2018; the financial and non-financial information of the companies must be public for the stakeholders. The purpose of this study is to analyze the degree of quantitative and qualitative compliance of the Romanian entities and of the other entities. In order to achieve this objective, we formulated the following hypotheses: **H1:** *The companies indexed in the GRI database comply with the TBL reporting framework and the GRI 4 standards;* **H2:** *The analyzed companies achieve performance due to the use of the TBL reporting framework and the GRI 4 standards;* **H3:** *The companies present environmental information as a result of a behaviour caused by an institutional isomorphism.* The analyzed reference year is 2018. After the analysis, a total of 9 sustainability reports resulted. The sustainability report information was initially analyzed using the dichotomous variable (Yes = 1; No = 0). Thus, the purpose is to ascertain whether environmental information is presented and to show how they are presented and to what extent. Therefore, we can see that in Table no. 1, only 4 companies out of 9 present the list of environmental indicators. As a result of the analysis, only two companies were eliminated, the companies TechnipFMC and Tullow Oil, as they did not present any sustainability report for the year 2018. Moreover, in order to achieve a high quality, relevant, useful, consistent and comparable analysis, we have also used the "Guidance on reporting non-financial information" developed by the European Commission (2017), which shows that the purpose of entities is to publish non-financial (ecological, and corporate governance aspects) and the Regulation of the National Securities Commission (CNVM) no. 1/2006. The sustainability reports of the companies analyzed were taken from the GRI website as well as from these companies' websites, and in order to show the "compliance with the sustainable reports on the TBL framework and the GRI 4 standards, we adapted the

methodology used in the study of Dalvadi and Gandhi (2012), in which it is analyzed the quantity of disclosure and the quality disclosure, on the basis of scores.

Quantitative and qualitative analysis of the communication of information on the natural environment

To determine the uptake and compliance with the requirements of GRI 4 standards, we analyzed the sustainability reports of the selected companies, published on the official website of the GRI database, as well as on their website for one year: 2018. The compliance of the sustainability reports of the analyzed companies was measured for size (natural environment) using scores from 1 to 5 on the quantity of information communication of the natural environment and from 1 to 7 on the quality of information communication of the natural environment, of which several diagrams result. In order to make the charts, we calculated the scores in relative values.

Chart no. 1 (see Appendix no. 2) shows the degree of compliance of the sustainability reports with the natural environment items on the quantity of information communication ("how much") required by the TBL framework for the year 2018. The maximum score that can be achieved by a company for the compliance with the natural environment items required by the TBL framework is 80. The 8 natural environment indicators on the amount of information communication required by the TBL framework for which we have given scores from 1 to 5 are: **Indexes; Profiles, Performance Management, Policies, External Relations, Occupational Health and Safety, Product Performance and Sustainability.** We can notice in *Chart no. 1*, that the relative score on the compliance of the sustainability reports with the natural environment items required by the TBL framework for the year 2018 was achieved by the companies: PETROM with a score of 100%, followed by Oltenia Distribution with 97,50% and by Premier Oil with 96,25%. Moreover, we can notice that the lowest percentage was achieved by Adrem. The score of 47,50%, obtained by the company Adrem is due to the fact that it published only two sustainability reports, for 2016 and 2018, which shows that the company's orientation towards publishing non-financial information has not been a priority. Thus, to show also the degree to which ("how much") each natural environment item complies with the GRI 4 standards requirements of the items of information communication quantity on the natural environment, in *Chart no. 2* (see Appendix no. 3), we calculated the total of each item separately in relative values. *Chart no. 3* (see Appendix no. 4) shows the degree of compliance of the sustainability reports with the natural environment items on the quality of information communication ("as measured") required by the TBL framework for the year 2018. The maximum score that can be achieved by a company for compliance with the natural environment items required by the TBL framework is 112. The 8 natural environment indicators regarding the quantity of information communication required by the TBL framework for which we have given scores from 1 to 7 are: **Indexes; Profiles, Performance Management, Policies, External Relations, Occupational Health and Safety, Product Performance and Sustainability.** In *Chart no. 3*, the maximum relative score on the compliance of the sustainability reports with the natural environment items required by the TBL framework for the year 2018, was achieved by the companies: PETROM with a score of 100%, followed by the companies Oltenia Distribution, Premier Oil and Urenco Ltd with a score of 96,45%%. Furthermore, following the analysis, we can notice that the lowest percentage was achieved by Cairn Energy and Adrem. The score of 75,00%, is obtained by the company Cairn Energy and 79,46% by Adrem. Therefore, in order to show the degree ("how much is measured") to which each item is respected regarding the natural environment with the requirements of GRI 4 standards of the quality items of the information communication on the natural environment, in *Chart no. 4* (see Appendix no. 5), we calculated the total of each item separately in relative values.

Results and discussions

Currently, the communication of information on corporate social responsibility is mandatory or voluntary to reduce information asymmetries. Furthermore, companies are actively oriented customers needs and expectations by implementing aspects concerning the natural environment in order to obtain business performance. Therefore, protecting the environment has become a high priority for the entities. The companies in the sample are oriented to guide themselves in publishing sustainability reports using the Global Reporting Initiative (GRI) G4 Guidelines reporting framework, in the "Core" option, to reflect openly on how they are reported, as well as and the impact that entities have in the operating area, in all three areas: economic, social and environmental, and are also influenced by the entry into force of Directive 2014/95 / EU and by OMFP 1938/2016, which introduced the "Non-Financial Statement", the Romanian companies being compelled to publish information on CSR. This high level of compliance of the sustainability reports on the TBL and GRI framework is also due to the change and awareness of the managers that the application and asymmetry of the non-financial information optimize the quality of the natural environment indicator, leading to increased company performance. In our study, the only Romanian company that achieves balanced compliance of the reports reaching 100% score on both analyzes, in terms of quantity and quality is PETROM. This degree of compliance of sustainability reports on compliance with the items required by GRI can be explained by the fact that Petrom has been publishing sustainability reports since 2011. The voluntary behaviour in publishing sustainability reports prior to the adoption of Directive 2014/94 / EU underlines a mimetic, coercive and normative isomorphic behaviour. The coercive isomorphic behaviour emerges for the period when sustainability reports became mandatory, through legal measures, since reporting for 2017, and the normative one results from the fact that the report was prepared in accordance with the GRI Standards: Core option and guided by the GRI G4 supplement specific to the oil and gas sector. This shows the commitment to openly communicate to all our stakeholders the impact of activities on the economy, society and the environment as well as the actions taken in order to better meet their expectations. This high degree of compliance is due to fines and penalties amounting to EUR 0.090 million (2017: EUR 0.076 million). These sanctions were a consequence of environmental incidents, including discharges and exceeding the limit values for the elimination of pollutants in the environment. The low degree of Adrem company in terms of quantity and quality of communication of environmental information indicates that for the Adrem entity the publication of sustainability reports is determined by the fact that, Adrem presents in its sustainability report it respects the protection norms of environment, complies with the laws and rules of the communities where it operates and also with the GRI Standards: Core option and guided by the GRI G4 supplement, resulting in a coercive, normative and mimetic mechanism, meaning that this mechanism is influenced by CNVM and reporting at the group level, the company not being actively interested in publishing non-financial information (Guşe et al., 2016).

Conclusions

As a result of globalization and the need to comprehend the principles of reporting by stakeholders and the entities. Companies are concerned about increasing sustainability goals and taking into account the notion of TBL derived from the definition of sustainable development in the Brundtland Report (Elkington, 1999). TBL reporting helps companies avoid, reduce, or control the harmful impact of their activities on the environment and population. Thus, this study examines the effect of stakeholder pressures and the isomorphism developed by DiMaggio and Powell (1983), on the corporate decision to ensure sustainability reports. As regards the first hypothesis, we can observe that all 9

companies indexed in the database of the GRI website comply with the requirements of the TBL reporting framework and the GRI 4 standards. The results obtained from the analysis of the companies' reports show that the uptake of the quantitative and qualitative reporting practices according to the TBL framework is significant. The second hypothesis refers to the benefits of increased performance on sustainability reporting practices. These are underlined in the sustainability reports and supported by Vaz et al. (2016), which shows that a high level of reporting under the two reporting frameworks leads to improved company image, reducing costs and attracting new potential investors. The results achieved by testing the third hypothesis show that the sustainability reports analyzed in 2018 are influenced by the three isomorphization mechanisms: coercive, normative and mimetic. A limitation of the research is given by the small sample used, after applying the selection criteria of the sample resulting in only 9 companies. A solution to show the compliance of sustainable reports with the principles of TBL reporting is the inclusion in the analysis of other sectors of activity too. The second limitation is the absence of discussions with persons within the companies. Another limitation is the possible subjectivity of the scoring and coding grid of reports. The paper intends to broaden the reporting vision of these companies and allow a better understanding of sustainability reporting.

To conclude, the study shows that the large companies in Romania, as well as the companies in Europe, from a quantitative and qualitative point of view, are in a continuous development process concerning the understanding of the TBL and GRI framework. Thus, the entities focus on the development of a sustainable process, with a positive impact on the economy, environment and society.

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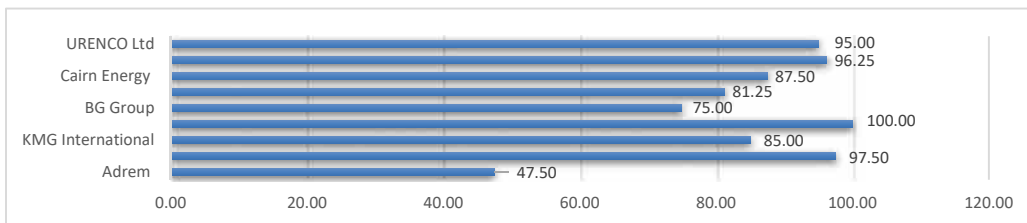
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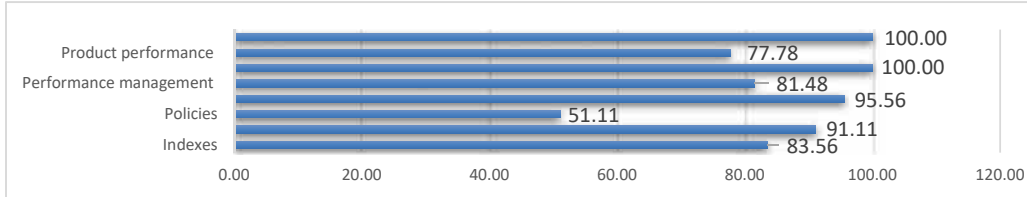
Appendix no. 1 Sample of companies indexed in the database of the GRI website

Companies	Countries	Section	Year	Sustainability report	Scores	Indicators
Adrem	Romania	Energy	2018	X	1	Yes
Distributie Energie Oltenia SA	Romania	Energy	2018	X	1	Yes
KMG International	Romania	Energy	2018	X	1	Yes
Petrom	Romania	Energy	2018	X	1	Yes
TechnipFMC	France	Energy	2018	-	0	No
BG Group	United Kingdom	Energy	2018	X	1	No
BP	United Kingdom	Energy	2018	X	1	No
Cairn Energy	United Kingdom	Energy	2018	X	1	Not
Premier Oil	United Kingdom	Energy	2018	X	1	Yes
Tullow Oil	United Kingdom	Energy	2018	-	0	No
URENCO Ltd	United Kingdom	Energy utilities	2018	X	1	Yes

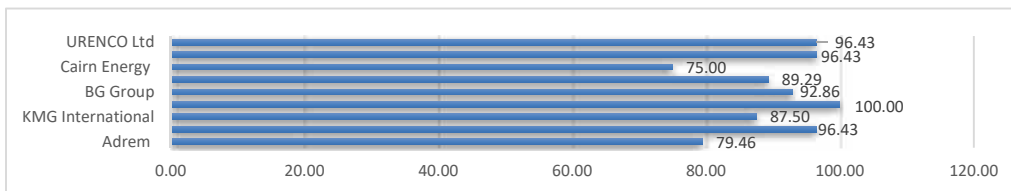
Source: Own processing

Appendix no. 2 Chart no. 1 Degree of compliance with the natural environment items on the quality of information communication

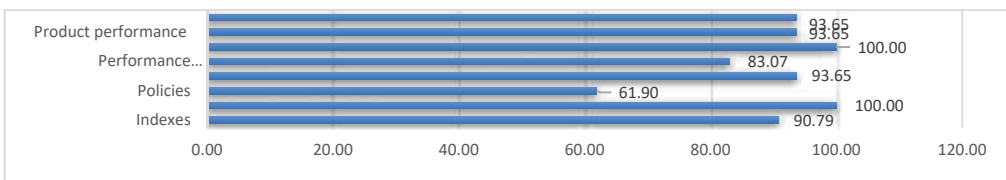
Processing: Own source

Appendix no. 3 Chart no. 2 Items of quantity of information communication on the natural environment

Processing: Own source

Appendix no. 4 Chart no. 3 Degree of compliance with the natural environment items on the quality of information communication

Processing: Own source

Appendix no.5 Chart no. 4 Items of quality of information communication on the natural environment

EARLY CHILDHOOD EDUCATION FOR SUSTAINABILITY ENTREPRENEURSHIP

Ioana Marin¹, Maria Ioncică² and Andreea Marin-Pantelescu³

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

E-mail: marinioana16@yahoo.com; E-mail: maria.ioncica@gmail.com;

E-mail: marin.andreea@com.ase.ro

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Abstract

In the last few years, early childhood education for sustainability entrepreneurship, education for sustainable development (ESD) has developed in a growing manner, as a field of compilation between education of early childhood and education for sustainability entrepreneurship. At the core of this concept stands the preschool child, as an active citizen for sustainability and entrepreneurship. Consequently, education for sustainability entrepreneurship, in our case, focuses mainly on preschool children's contributions to sustainability, outlining key recent developments in this field. These ideas represent the foundation on which the current article will be built. The main aim of this article is to analyze the ideas of preschool parents concerning sustainability, entrepreneurship with regards to the 3 pillars of Sustainable Development (Environmental, Economical, and Social Cultural) and with major focus on the 7R's. In this respect, a quantitative analysis, a questionnaire regarding ideas of preschool parents on sustainable development, has been carried out, with data being collected from 174 preschool parents attending two different public preschools, one in rural environment, another in the urban environment, supervised by the Ministry of National Education of Romania in Prahova district. The outcome of this research proved that preschool parents and their children value nature and environment.

Keywords

Sustainability Entrepreneurship; Early childhood education; Education for sustainable development; Sustainable Development

JEL Classification

I25; Q01; H75; Q56

Introduction

Preschool children's education for sustainable development emerges as a major concern of contemporaneity both in theoretical and practical fields. This current article focuses on the growing attention to the practice of early childhood education in direct connection to sustainable development, entrepreneurship. The study reviews contemporary developments

in preschool children's education as related to sustainability, a field which is constantly growing, the main aim being to respond to nowadays concerns of sustainable development, from early childhood.

Education for sustainable development

Veisson and Kabaday (2018, p. 5) identified two definitions for the concept of education for sustainable development (ESD): firstly, an approach based on questions about the meaning and the importance of the environment for us humans and secondly, an approach that incorporates the four major dimensions of our existence: economy, society, culture and the environment. The first approach focuses on the way the preschool teachers themselves understand ESD and how it can be conveyed to young children, while the second focuses on how ESD can be put into effect at the class level (Hedefalk, Almquist and Ostman, 2015).

Several scholars among which can be mentioned Pipere, Veisson and Salite (2015) and Wals (2013) state that there is a lack of research in the field of sustainable education and the majority of universities don't offer programs targeted at this rather particular field. They unfortunately pay a minimum of attention to newer fields such as ESD and sustainable education (Wals, 2013). The only way to promote a sustainable economic growth and development is to recognize the importance of ESD and teach it in schools and nursery schools. The poverty rates at a global scale have decreased but the gap between those very rich and very poor has never been wider, inequality has increased, the level of violence and the youth prospects are very bad for underdeveloped societies. Because in many parts of the world the economic growth and urbanization has developed unchecked and in an unsustainable manner, it has in turn contributed to global warming and the degradation of the natural habitat. In many parts food security has also become an important issue (UNESCO, 2015, p. 9). Consequently, measures need to be taken. The aim of the Education for Sustainable Development (ESD) is to develop in children an awareness of the environmental concerns and problems that humanity faces both in the present and in the future and encourage them to find new ways to make the growth sustainable and the societies more adaptable (UNESCO Global Education Monitoring Project, 2016, p. 494). The most important thing to understand for future generations is that our planet's resources are finite and in order to conserve our collective futures there must be a synergy between economic development and environmental conservation (Holdsworth, Thomas and Hegarty, 2013, p. 352). The ESD system recognizes that along with environmental concerns, cultural diversity, peace, moral values and justice are paramount notions that need to be instilled from a young age (Gorenflo et al., 2012). A study conducted by Ritchie (2012), shows that some studies have based their principles on the Maori teachings of caring for the people around us and the environment. In Australia for example, the schools who adopted this method of teaching have shown better understanding of Early Childhood Education for Sustainability (ECEfS) and also the importance and impact of the environment on our lives and the society we live in (Dyment, Davis and Nailon, 2014). Also preschool teachers who follow the ECEC method (Early Childhood Education and Care) have more ease in adapting to Education for Sustainability (EfS) than those in the classic education system. In this vein, according to Davis (2013) instilling in young children an education oriented towards ecological values is "an approach to early education that is underpinned by both humanistic and ecological values. It aims to empower children (and the adults within their early childhood settings and homes) to explore and change ways of thinking, being and acting in order to minimize environmental impacts and to enhance environmentally and socially sustainable practices" (Davis, 2013, p. 2).

In order to study preschool children's understanding of ESD, the research methodology is organised around the concept of sustainable development, which is made up of three integrated pillars, sustained at their turn, each, by two or three dimensions, known as the

7R's: social-cultural pillar (Respect, Rethink and Reflect), economic pillar (Recycle and Redistribute) and environmental pillar (Reduce and Reuse). These pillars complete each other (UNESCO, 2005). In 1987, *Our Common Future*, stipulated that there are 7R's which can ease ESD practices in educational approaches. The 7R's can be found below (fig. no. 1):

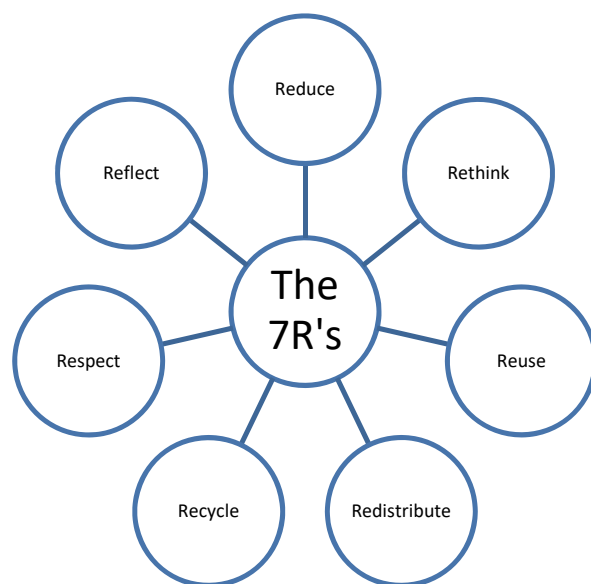


Fig. no. 1 Three Pillars of Education for Sustainability Development and 7R's

Source: Duncan, E. 2011. *Report Part 2 – ESD in practice*. Norway: OMEP (Organisation Mondiale Pour L'Éducation Préscolaire); OMEP. 2010. *OMEP World Congress and Assembly in Göteborg University*. Retrieved March 5, 2019 from http://www.omep.org.gu.se/digitalAssets/1314/1314390_esd-congressreport-child-interviews.pdf

Research Methodology

Starting from these concepts, a quantitative analysis, a questionnaire regarding ideas of preschool parents on sustainable development, has been carried out, data being collected from 174 preschool parents attending two different public preschools, one in rural environment, another in the urban environment, supervised by the Ministry of National Education of Romania in Prahova district.

The questionnaire was constructed by using isondaje.ro and it was made available online in April 2019. It was sent to a number of 180 parents and the final sample was composed of 174 conclusive responses, the response rate being of 96, 6%.

Results and discussion

The attitudes of preschool parents regarding environmental sustainability were analyzed under three aspects: Consumption dimension (environmental pillar – reduce), Socio-Cultural dimension (-respect) and Economical preservation, focused on Recycling. The research was conducted having as a basis a questionnaire with 19 questions. The outcome is presented further on.

The questionnaire was aimed at shedding some light on the aspects related to the involvement of the family in children's educations as a determining factor in sustainable development. In terms of the Consumption dimension, there were three aspects studied: electricity, water and paper consumption.

The first question was: who is more involved with the children's education: 44, 8% mothers, 17,2% fathers, 10, 3% equally, 20, 7% grandparents and 6,9% another person. For question two, we tried to launch the following hypothesis: water saving represents a priority for the family. The answers to this question proved that the hypothesis is false because only 17, 2% agreed in total, 38, 5% agree, 13, 8% indifferent, 27,6 disagreement. Also we can see from here that only a minority of people realize the importance of the water saving. Next the parents were asked how they help the children to save water: 6,9% responded by installing some sensor valves, 19,5% answered by reading educational stories, 70,1% stated that they teach with their own example, and 34% others.

Further, for question four, the issue of light saving was analyzed, which is an important factor in extending the life of electricity resources. A significant percentage 61,5% were in total agreement, 35,1% agree, 1,1% indifferent, 2,3% disagreement. It is encouraging that a significant percentage of the parents are in total agreement with light saving. Question five refers to the methods that parents use to educate the child in terms of saving light: 44,3% close the light when they leave a room, 27% close TV, computer or another electronic appliance, 25,3% use eco-friendly bulbs, 3,4% others. Further we asked if the children save paper in their painting, drawing, writing activities and the parents have responded: 40,2% sometimes, 34,5% always, 19% rarely, 6,3% never.

Further on, another dimension analyzed was the Socio-Cultural one, with one aspect studied: respect towards animals. The respondents had to choose for the next question if they have animals: 51,7% chose yes and 48,3 no. We also enquired about activities children do with the animals and got the following answers: 29,9% feed the animals, 11,5% care and tend to the animals, 3,4% other activities.

Next, and also the last dimension analyzed, was Economical preservation, focusing on Recycling. The hypothesis: the percentage of parents that select the waste is at least 70%. As we can observe the hypothesis is false. In this respect 59,8% select the waste, and a semnificative procent 40,2% don't select the waste. This is a probleme of education, of habit, which can be straightened out with the help of education programmes. Good will exists and the positive model, to recycle, has penetrated more and more into our life and communities. Asked if they select the waste on categories, the answers were as follows: 48,3% select plastic and glass and 7,5% try recycling glass, aluminium and plastic. Paper, glass, aluminium and plastic – the most thorough recycling is realised by 37,4% from the total of responednts. Every action is good and favorable for the waste management. Education realises the difference and we prove this with the next question: do people teach their children about recycling: well a very large majority 83,9% said yes and 16,1% said no. Trying to look from another perspective we studied the choices parents do when it comes to organic products. The reserch shows the following: 55,2% choose to consume bio products daily, 44, 8% do not choose bio products, they do not trust them.

To what extent do you consider that bio foods contribute to the health of your child was the last question from our questionnaire and with it we would like to investigate the parents concern for bio products in the diet of children (fig. no. 2), source the results of the authors' research:

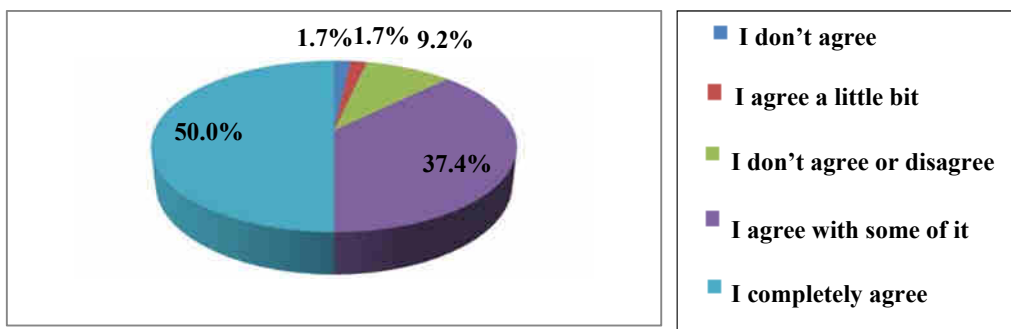


Fig. no. 2 To what extent do you consider that bio foods contribute to the health of your child

Source: author's own findings

A very large proportion 50%, a large proportion 37,4 % the respondents buy bio foods for their children, only 1,7%. respondents don't buy bio foods. So the parents are concerned about giving children natural variants for food and health.

The demographic profile of the respondents was following from the point of view of the environment, age, studies and income. So, 65,5 % of the total respondents was from urban environment and 34,5% was from rural respondents. The age of respondents was 19,5% in the range 18- 25 years, 30,5% in the range 26- 35 years, 36,8% in the range 36- 45 years, 13,2% in the range 46 - 55 years. The studies of respondents were: 12,6% have high school, 43,7% have faculty, 38,5% master and 5,2% doctorat. The income was 8% under 2000 RON, 39,1% between 2000 - 3000 RON, 32,8% between 3100- 4000 RON, 13,2% between 4100- 5000 RON and 6,9% over 5000 RON. It observe a balanced structure in the sample selection profile.

Conclusions

Positive outcomes in early childhood education can be achieved through ESD's potential to develop approaches adapted to their understanding. The desire of those who implement this type of approach to education is to form preschool children as responsible, proactive and aware citizens, as they are our chance to prevent in the near future unsustainability and ecologic crises. Children and their parents need to enjoy and understand the environment but also to learn how to protect their natural habitat. They need to be encouraged to play an active part in their communities and be taught topics that will be important for their future. In this study, the parents of preschool children demonstrated how they perceive dimensions such as reducing, reusing, recycling and respecting. Preschool teachers, parents can teach the children how to live a life that promotes sustainability, entrepreneurship and it is essential to be update our curriculum, share ideas and for the introduction of education for sustainability in our nursery schools. But, there should also be a collaboration, projects between teachers and the business environment, which can encourage sustainability, following a structural change towards socially and environmentally sound economic activities. With its innovative business models, it could develop new markets, generate new sources of income, especially for socially disadvantaged population groups and contribute to a sustainable approach to the economy. Sustainability entrepreneurship contributes to solving social and environmental problems, particularly in developing countries, like Romania.

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IMO 2020: ENVIROMENTAL AND ECONOMIC IMPACT

Adrian Istrate Scrădeanu¹, Andrei Cepoi², Enas Aboura³ and Mihaela Bucur⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: istrate@europe.com; E-mail: idandrei@gmail.com;

E-mail: enaso1993aboura@gmail.com; E-mail: bucur.mihaela@yahoo.com

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Abstract

United Nation adopted since 2016 trough its agency International Maritime Organization (IMO), the regulation that imposed reduction of Sulphur in the fuel used by merchant vessels. Rule mandating lower sulfur emissions for the shipping industry went into effect on January 1, 2020. The new regulations, already in force and addressed as IMO 2020 have been the subject of concerns and predictions of vast disruptions and impacts to shippers, customers, ship owners, affecting supply chains. The study will highlight the importance of the adopted rule for the environment, which was the trigger for the United Nation to act. Beside this, the study below aims to research and to give an outlook from economical point of view of main parties affected by IMO 2020, respectively customers and vessels owners. Official acts, norms and studies will be reviewed for proper conclusions. Results will show that indeed environment get a boost but with additional pressure and costs rise for involved parties, costs being transferred on the final product that is subject of maritime carriage.

Keywords

IMO 2020, environment, costs, supply chain

JEL Classification

I10,Q01, Q53, R41

Introduction

According International Chamber of Shipping 90% of the world trade is performed by sea (ICS, 2020), UNCTAD reveal that in 2018 a peak of 11 billion tons of cargo has been carried over the sea (UNCTAD, 2019). There are over 50.000 merchant ships around the globe, that beside their cargoes, assure the jobs of over 1 mil seafarers (FIATA, 2019). But these ships are also responsible for the consumption of 3.5-4 million barrels of fuel per day, which

delivers 15 million tons of emissions in the air (EPA, 2020). The World Health Organization (WHO, 2019) estimates that some 3.7 Million deaths in 2012 are attributed to ambient air pollution, while shipping industry is one of the main contributors to worldwide pollution.

Environmental aspects

The International Maritime Organization, as regulatory body of United Nations, policies to tackle maritime air pollution date back to the 1990s, and IMO 2020 itself was announced in October 2016. There were various associations that required for another postponing of this regulation (UGS, 2019), but at the request of IMO, The Finish Meteorological Institute revealed through a report that : “Delay in implementation of global Sulphur limits from 2020 to 2025 would, according to the study, contribute to more than 570,000 additional premature deaths compared to the implementation from 2020” (IMO,2016, p.2). Our study answer to what is IMO 2020 and how to respect it.

Economical aspects

If we consider the supply chains as an ecosystem involving various actors like sellers and buyers, shippers, ship owners, regulatory bodies and others, new regulations applying to any of the actors will come with a cost. Subject cost will affect the entire ecosystem, finally being transferred to the price of the product that is subject of maritime transport. About 60 to 70% of the maritime movement cost is due to fuel price itself (ICS, 2018). The study will show how much will cost to respect IMO 2020 and how cost will be divided through the supply chain.

Vessels bunker and fuels

The main type of “bunker” oil for ships is heavy fuel oil (HFO), derived as a residue from crude oil distillation. Fuel used on ships do contain Sulphur which, which after usage in the engine, beside propulsion generates ship emissions. Sulphur oxides (SOx) do a lot of harm to health, mainly causing respiratory deficiencies and lung severe disease (Lelieveld, 2015). In the atmosphere, SOx can generate acid rain, damage the crops, forests, and marine species, and contributes to the acidification of the seas (Winebrake, 2009). IMO 2020 is to limit SOx emissions from ships aiming to improve air quality and protects the environment. From 1 January 2020, the Sulphur limit in fuel oil used on board ships operating outside designated emission control areas is reduced to 0.50% m/m (mass by mass) from a previous 3.5% m/m. Reduction of Sulphur content in the fuel used will automatically reduce other toxic components of the fuel like NOx (oxides of nitrogen), PM (particulate matter), CO2 emissions (carbon dioxide). Global NOx and SOx emissions from the maritime industry do stand for about 15% and 13% of global NOx and SOx from anthro-pogenic sources reported in the IPCC Fifth Assessment Report (IPCC, 2014). In table 1 (table no.1) are presented evolution of various components as per “Health Impacts associated with delay of MARPOL Global Sulphur Standards” of IMO (EGCSA, 2012).

Table no. 1 Evolution of toxic components with and without IMO2020

Pollutant tones(000)	Applying IMO 2020	Non-applying IMO 2020
NOx	21000	19000
SOx	2500	10900
PM	760	1900
CO2	862000	938000

Source: <http://www.imo.org/en/MediaCentre/HotTopics/Documents>

To have a view of how much is currently polluting a single 20' container with 20 mt of cargo have gathered in the table 2 (table no.2) several intense routes of navigation:

Table no. 2 CO2 Emissions

1 TEU at 20 mt	kgCO 2
Shanghai - Rotterdam	1,961.99
Shanghai- New York	3,082.13
Shanghai- Cape Town	3,547.86
Shanghai - Santos	2,837.62

Source: <https://www.dhl-carboncalculator.com/>

The new generation of ULCC (Ultra Large Containers Carriers) do have a nominal capacity of +18.000 TEUs (Twenty foot Equivalent Unit), already in 2019 vessels with nominal capacity of 23.000 TEUs has been launched.

Complying with IMO2020

There are very few options for ships owners to respect IMO 2020 rules, adopting one of the below accepted methods:

- Usage of Marine Gas Oil (MGO) instead of HFO
- Usage of Very Low Sulphur Fuel Oil (VLSFO) instead of HFO
- Installing on engine a component called scrubber that holds emission and using HFO
- To completely switch fuels from oil types to LNG (alternative fuels for commercial use)

In table 3 (table no.3) are presented several advantages and disadvantages of above methods chosen.

Table no. 3 Methods to respect IMO 2020

TYPE	Advantages	Disadvantages
MGO	Worldwide availability of MGO. Minimum training for the crew.	Boilers cannot sustain use of MGO without modifications.
VLSFO	Engine performance increased; range increased.	High prices, reduced number of suppliers.
Scrubber	Clean performance, ready to meat IMO 2025 at 0.01% m/m Sox.	Ships must enter shipyard for installation, few providers.
LNG	On long term is the most efficient engine.	Ports not prepared for bunkering, completely new design for ship.

Source: <http://www.imo.org/en/MediaCentre/HotTopics/GHG/Pages/default.aspx>

Costs to comply with IMO2020

For benchmarking purpose, we will take in consideration for calculations the technical aspects of a Very Large Container Carrier (VLCC).

As per a Wood Mackenzie study (2019), bunker costs will rise by up to US\$60 billion annually if all carriers will comply with IMO regulation.

To have a view of what means switching from traditionally used HFO to VLSFO or MGO we will show in table 4 (table no.4) below prices available for bunkering in Rotterdam on December 2019. A VLCC consumption goes to 100 mt/per day of voyage.

Table no. 4 Bunker price in Rotterdam on December 2019

Rotterdam Dec'2019	USD/mt
HFO	288
MGO	606
VLSFO	586

Source: <https://shipandbunker.com/prices>

Installing scrubbers is one of the alternatives to comply with IMO2020 and might be an economically option (Hufnagl, 2005). Although there is an initial investment, ship owners may have a high rate of return of between 20% and 50% (Wood Mackenzie, 2019). The problem is that are very few producers of scrubbers in the world and vessel needs to be docked for scrubber installation. Although announced attractive returns, access to scrubber's installation could be limited by access to finance, scrubber manufacturing capacity, dry-dock space and technological limitation. Scrubber installation for a VLCC goes to 4.5-5 mil USD, without taking in consideration of "dead" time of not using the vessel during dry dock (Drewry, 2012). Some of the owners of containers carriers announced on the other hand that installing scrubbers on board is slashing vessel carrying capacity.

Although LNG sounds like one of the cleanest ways to proceed in respecting IMO 2020, there are several challenges, most notable being that despite low price of LNG fuel only few ports of the world are ready to deliver LNG to vessels (IQPC, 2019). Also, there is the high price to install LNG capabilities on vessels, for example CMA-CGM reported a price of 13 mil USD to adapt LNG propulsion to one of the vessels from the fleet.

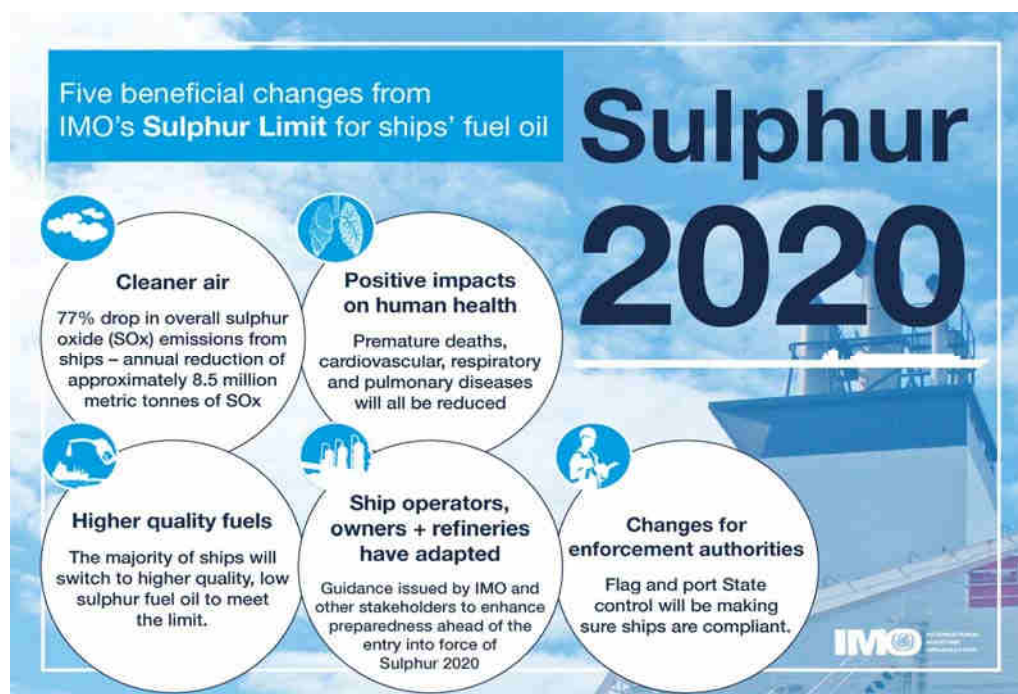


Fig. no. 1 IMO 2020 impact

Source: <http://www.imo.org/en/MediaCentre/HotTopics/Pages/Sulphur-2020.aspx>

Transfer of IMO 2020 costs on cargoes

Considering table 4 which indicates the bunker prices on December 2019 we may observe that the fuels need it to be used by vessels according IMO 2020 are double on price compared with formerly used ones. Also having in consideration that the bunker cost represents 60-70% from the lumpsum cost of transported freight we can indicate that the impact on the freight charges will be high. The shipowners and ship operators will have as only option both to increase the freight but also to levy surcharges on the transport in order to recover the costs either with ship's modification or for the compliant fuel.

Again, for benchmarking purposes will use public data and freight announced by top containers lines (Alphaliner, 2020). The data are compiled using Shanghai Containers Freight Index (SCFI, 2019) which is a metric tool that show the health of global trade out of Shanghai to various 15 worldwide lanes. At the end of Q3 2019 SCFI was at USD 716. Already at the end of Q4 2019 SCFI hick up to USD 959, which reveal an increase of almost 34%. As per US Customs statistics and IHS (IHS, 2019) studies average value of cargo for a container from Far East to Europe or US is USD 20.000. Therefore, we can estimate that IMO 2020 has a minimum impact of costs of 1 and may go to 10% on top of the cargo value.

Conclusions

International Maritime Organization set the course through its new regulation to reduce Sulphur on the fuel used by maritime industry. Subject rule does impact positively the climate, but also raise the cost of maritime transport with a direct connection to final price of cargo carried over the seas. Key figures are:

- Reduction of Sulphur content from fuels from 3.50% m/m to 0.50% m/m starting 1st of January 2020
- Reduction of Reduction of Sulphur content from fuels from 0.50% m/m to 0.10% m/m starting 1st of January 2025
- Aiming to reduce footprint carbon of maritime industry with 8% by applying this new regulation
- Direct impact on fuel prices, on December 2019 fuel price is double
- Is calculated that minimum impact on cargo value is 1%, but going to 10% for cheaper raw materials

We may conclude that on one side vessel owners had enough time (more than 5 years) to cope with IMO 2020 challenges and to prepare vessels for the low Sulphur rule. On the other hand, is reasonable to affirm that a clean environment come with a price, that should be distributed through the parties of a supply chain.

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COUPLE ROLES IN WINE PURCHASE DECISIONS - A STUDY OF BULGARIAN RESIDENTS

Petyo Boshnakov¹, Georgi Marinov² and Irina Kancheva³

^{1) 2) 3)}University of Economics, Varna, Bulgaria

E-mail: pboshnakov@ue-varna.bg; E-mail: gmarinov@ue-varna.bg

E-mail: irina_kancheva@abv.bg

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Abstract

In our study, we explore the perceptions about couple roles in wine purchase decisions for Bulgaria, a traditionally wine producing and wine consuming country. We use a survey with questions on preferences in taste and purchasing habits, besides the core questions about couple roles in the three phases of the purchase process. Our main findings are that Bulgarian respondents consider the decisive power of both spouses as equal, with both partners having their say in all three phases of the process. Our results differ from previously obtained results about alcohol purchase decisions, where it was found that the husband has more power in alcohol purchases than the wife. We argue that wine could be regarded as differing from the rest of alcohol beverages, being a special product category.

Keywords

Roles distribution, traditional couples, Bulgarian couples, decision-making process, bottled wine purchases.

JEL Classification:

D12, D91, M31, Q13

Introduction

In their seminal paper, (Davis and Rigaux, 1974) formulate the two main questions related to marital roles in the decision making process: the difference by phase of the process, and to what extent perceptions about the roles of husbands and wives in the various phases coincide. Typically, the purchase decision process is divided in three phases: problem identification, information search, and final decision. Couple roles are perceived as different in the phases, with more specialization on the information search. Roles are regarded as less specialized for the final decision phase (Belch and Willis, 2002).

Alcohol is found to be within the decisive power of the husband, with few differences between the phases (Davis and Rigaux, 1974) whereas nonalcoholic beverages and food are within the "specialization" of the wife. However, consensus about the partners' roles is less expressed for alcohol, compared to other products. As (Webster, 1995) shows, alcoholic beverages share the same group as garden tools, cleaning products, children's toys, kitchenware etc. Groceries are dominated by wife (Green et al., 1983; Barlés-Arizón, Fraj-Anés and Martínez-Salinas, 2013). Couple roles are often found to vary throughout the decision process (Belch and Willis, 2002).

Alcoholic beverages decisions seem to be significantly less consensual than food and nonalcoholic beverages decisions, for example. The discrepancies are especially visible in the first phase (problem identification).

If more specific categories are explored, i.e. "wine", "beer", or "gin", rather than "alcoholic beverages", (Davis and Rigaux, 1974) argue that validity of level of role consensus could be raised.

In our study, we explore the roles of partners in traditional/heterosexual/ Bulgarian couples with respect to their decisions to buy bottled wine.

Methodology

To explore decision habits for wine purchases, we carried out a study in the period February-March 2020. We use a convenience sample, of "snowball" type. Our sample consists of 293 Bulgarian residents aged above 28, 164 women and 129 men, living in Northeastern Bulgaria, 201 in bigger places (cities), and 92 in towns and villages.

We asked our respondents to answer 22 questions related to their knowledge about wines and wine sorts, to their drinking preferences, and to their wine purchasing preferences.

As we try to explore the decision powers within the couple, we apply screening of respondents, all of our respondents are in a couple relationship, with average partnership duration of 15.4 years (median 12 years). Age of our respondents is between 29 and 80 years, the average and the median are 43 years, 1st and 3rd quartile 50 and 33 years. Given the relative few respondents aged above 65 (14 respondents, 65 is the common retirement age in Bulgaria), we cover mainly economically active people, which are the most active wine consumers in the country.

Previous studies on couple roles in buying decisions for Bulgaria show that alcoholic beverages are among the products for which the husband has more power, for all three phases in the purchase process. As (Kancheva and Marinov, 2014) show for Bulgaria, alcohol is among the strongly "husband dominated" product groups, with rather autonomous than joint decisions, in all three phases of the purchase process.

In our study, we use classical Likert-type items with responses from Strongly Agree (5) to Strongly Disagree (1). For the questions about the three phases of the decision process, "who identifies the need", "who searches for variants", "who makes the final deal", we use following responses: the husband (1), rather the husband (2), both equally (3), rather the wife (4), the wife (5).

Given the nature of Likert-type items, in our study we make use of non-parametric statistics, as the Mann-Whitney-Wilcoxon test (MWW), the Kruskal-Wallis test (KW) etc. and we believe this is without loss of power, compared to parametric statistics, while on the other hand we do not have to be worried about the distributions of our data. As (de Winter and Dodou, 2010) demonstrate, based on a simulation study, for five-point Likert-type items t-test and MWW test have similar power, with MWW being even more powerful than t for seven-point scales. MWW is shown by (Nanna and Sawilowsky, 1998) to improve in power as the sample size increases, therefore it is plausible to use it also for large samples.

Results and discussion

Our main interest being the nature of couple roles in the different phases of the decision process, we analyzed the dependence of perceptions in several aspects, making different cuts among respondents.

Table no. 1 Perceptions about couple roles by sex of respondent

Question	"Who identifies the need?"	"Who searches for variants?"	"Who makes the final deal?"
Median (total respondents)	3	3	3
Median (f-respondents)	4	3	3
Median (m-respondents)	3	3	3
MWW test (p-value), f-m	0	0	0
Vargha and Delaney A	0.65	0.59	0.61

Source: Authors' calculations

By grouping respondents by sex (using it as a factor), we found that couple roles in the wine purchase process are perceived as rather equal, with no dominance of either of the sexes, with the slight dominance of the wife in the identification phase. These results contradict to earlier studies on the more general alcohol group. Wine seems to be perceived apart from other alcoholic beverages.

Since the MWW tests strongly reject the null, we assume that differences between women's and men's perceptions do exist, however the Vargha and Delaney A test values (Varga and Delaney, 2000) suggest that effect sizes are small, though not negligible (table no. 1).

Table no. 2 Perceptions about couple roles by place of respondent

Question	"Who identifies the need?"	"Who searches for variants?"	"Who makes the final deal?"
Median (city)	3	3	3
Median (town/village)	3	3	3
MWW test (p-value), city-town/village	0.71	0.35	0.63
Vargha and Delaney A	0.51	0.54	0.52

Source: Authors' calculations

Unlike the results in the previous grouping, we found that there are no differences in perceptions of respondents residing in big and small places, since the MWW tests do not reject the null. Effect sizes are negligible - Varga and Delaney A test values are very close to 0.50 (table no. 2). In the last decades living and working styles in bigger and smaller places in the explored region, and in Bulgaria in general, strongly converged, including the purchasing habits - same sets of stores are available practically everywhere in the country. Therefore the lack of differences is a plausible outcome.

Table no. 3 Perceptions about couple roles by "classical" drinkers

Question	"Who identifies the need?"	"Who searches for variants?"	"Who makes the final deal?"
Median (classical)	3	3	2
Median (nonclassical)	3	3	2
MWW test (p-value)	0.77	0.13	0.001

Source: Authors' calculations

Further we explored the perceptions of the "classical" drinkers (persons who drink wine only the "classical" way, i.e. they never drink red wine to fish, and never drink white wine with red meat, 84 of our respondents, we compared their results to the 120 "nonclassical" drinkers, which both drink red wine to fish and white wine to red meat), the results are in (table no. 3). We find that only for the final phase there are differences between the perceptions of respondents, despite the same median values. In Bulgaria, the traditional drinking style includes drinking of wine after an aperitif of stronger beverages, mainly rakia (the traditional spirit beverage). This drinking style is typical for most Bulgarians, in previous decades most drinks were home made. And even with the modern trends to drink more bottled, professionally produced wine, the habits and perceptions do not differ between types of drinkers.

Table no. 4 Perceptions about couple roles by "exclusive" wine drinkers

Question	"Who identifies the need?"	"Who searches for variants?"	"Who makes the final deal?"
Median (exclusive)	3	3	3
Median (nonexclusive)	3	3	2
MWW test (p-value)	0.17	0.40	0.09

Source: Authors' calculations

The next comparison is between "exclusive" wine drinkers (168 persons who declared that they do not mix wine with other alcohol) and the rest of "nonexclusive" drinkers. We find virtually no differences in their perceptions, with possible rejection of the null only for the third phase, and only by 10%. Again, the strong tradition of typical drinking habits wipes out the differences between the types of drinkers.

Table no. 5 Perceptions about couple roles by typical price preferences, preferred type of wine and intensity of purchases, Kruskal-Wallis tests (p-values)

Question	"Who identifies the need?"	"Who searches for variants?"	"Who makes the final deal?"
Price preferences	0.03	0.42	0.21
Preferred wine	0.18	0.42	0.48
Origin of last wine bought	0.12	0.39	0.39
Purchase intensity	0	0.02	0.31

Source: Authors' calculations

Preferred price, by amount of the typical purchase ("under 5 BGN" - 13 respondents, "5-8 BGN" - 69 respondents, "9-12 BGN" - 109 respondents, "13-25 BGN" - 76 respondents, "over 25 BGN" - 30 respondents) leads up to differences in perceptions only in the initial phase, with p-value of the KW test 0.03.

There appear to be no differences in perceptions by respondents preferring different types of wine ("white dry" - 110 respondents, "rose dry" - 56 respondents, "red dry" - 112 respondents, "Champagne" - 9 respondents, "fortified" - 6 respondents).

Origin of last purchased wine (a country - "BG" - 178 respondents, "FR" - 44 respondents, "IT" - 19 respondents, "ES" - 9 respondents, "NZ" - 6 respondents, "CL" - 5 respondents, "PT" - 4 respondents, "AT" - 2 respondents, "MD" - 2 respondents, "other" - 24 respondents) leads also to no differences in the answers (however, there is a difference in purchase habits, when origin of last purchased wine is tested to the intensity of wine purchases, KW test p-value is 0.001).

We screened our respondents also by intensity of wine purchases ("I don't buy", 41 persons, "2-3 times annually", 82 persons, "2-3 times per month", 127 persons, "several times per week", 43 persons. The group of "non-buyers" consists of 23 women and 19 men, with an average age of 48 years and with average partnership experience of 21.29 years.

Given that the total average for the sample is 33 years, and the average partnership experience - 14.86 years, we can broadly assume that the "non-buyers" are older people.) We reject the null of no difference in perceptions for the two first phases of the decision process. We can argue that these results comply with our findings in the other cuts.

Conclusions

We find that perceptions among Bulgarian residents reveal that there is no dominant partner in wine purchase decisions, with both husbands and wives having certain decisive power, and we consider this result as the most important outcome of our study. Various cuts we made to explore the perceptions in more detail, i.e. by gender, place, purchasing preferences, taste etc. showed that no differences exist in the perceptions about who is the decisive partner, in all three stages of the purchase decision process, with very few exceptions.

An interesting future area of research could be the study for the existence of possible linkages between buying preferences and knowledge (expressed as known prior informations) about wine types. This direction of future studies seems promising as a possible guideline for advertising and educational campaigns.

The degree of wine purchase role specialization between partners also provides directions for further empirical investigation, once again, as a possible guideline for advertising and educational campaigns.

Our analysis provides evidence that wine is a specific product, which is characterized by different decision-making power distribution within the couples, compared to the general alcoholic drinks product category. In this way, it highlights the need for special attention when designing future research, aimed at consumer behavior investigation in the context of the wine product category.

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NEW TECHNOLOGIES IN THE 21ST CENTURY - ADOPTION, ACCEPTANCE AND IMPACT ON BUSINESS MODELS

Dragoş Tohănean¹, Ioana Ceaşu², Laurenţiu Tăchiciu³ and Ştefan Tohănean⁴

^{1) 3)} *The Bucharest University of Economic Studies, Romania*

²⁾ *Humboldt Universität zu Berlin, Germany*

⁴⁾ *Transilvania University of Brasov, Romania*

E-mail: tohanean_dragos@yahoo.com; E-mail: ceasuio@hu-berlin.de;

E-mail: laurentiu.tachiciu@gmail.com; E-mail: tohanean.stefan@gmail.com

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Abstract

The human race has always innovated, and in a relatively short time went from building fires and making stone-tipped arrows to creating smartphone apps and autonomous robots. Today, technological progress will undoubtedly continue to change the way we work, live, and survive in the coming decades.

Technology is a driver for business. The (technological) innovative power as a result of wide availability and rapid development accelerates economic cycles, changes labor markets and business models - with corresponding consequences for corporate management, planning and monitoring. New products and services, markets and players emerge that extend their business model to traditional economic sectors. This has an immense impact on the traditional strategy process. While technology was often a lever for implementation in the past, it is now a strategy driver.

To investigate resulting impacts, we draw on the existing business models and deduct specifics for the 21st century technologies. Building on this, in order to reach the aims of the paper the authors will use a descriptive research method (a case study), a quantitative research method (online questionnaires) and a qualitative research method (face to face interviews). The data gained will be analyzed to understand what 21st century technologies are, what technologies are seen as perspective to be developed in the next 25 years and what industries will be most affected in the future.

Keywords

Technology, 21st Century, Business Model

JEL Classification

M19, O32

Introduction

Anyone who tries to read into an area of science or technology using a lexicon usually has to surrender. The cross-reference cat and mouse hunt are more exhausting than teaching. Especially when an area is developing as rapidly as technology.

In the film "I, Robot" Will Smith is faced with a huge army of robots, all ready to take over the world and in "Matrix" man is only a tool, the machines control him completely. There are scenes from Hollywood films and messages such as "80 percent of all jobs are taken over by robots" that are often associated with 21st century technologies in the world and which cause one thing: fear. Fear of the future, fear of no longer being used, fear of being replaced by a machine, fear of change and fear of the speed that technology is evolving.

Technology in the 21st century has enabled us as humans to make strides our ancestors could only dream of (Diggory, 2018). And yet, nagging doubts remain that technology is taking over our lives. Love it or loathe it, technology affects almost everything we do today and it also influences most of our plans for the future. Whether we experience the benefits of a hearing aid or a hearing implant, use a mobile phone, listen to music and radio, surf the internet for news or turn the GPS on in our car, we are constantly enjoying the benefits of a hi-tech life (Diggory, 2018). Technology making our lives healthier, more convenient and more entertaining. The focus is clear: utilize technology that makes your life easier (Diggory, 2018).

Since the beginning of the new millennium, the world has witnessed the emergence of social media, smartphones, self-driving cars, and autonomous flying vehicles. There have also been huge leaps in energy storage, artificial intelligence, and medical science. All this together are creating new companies and new ways of doing business, technological advances providing opportunities to innovate and develop successful businesses (Young and Sauter, 2020).

Business models are fundamentally linked with technological innovation generally and digital innovation in particular, yet the business model construct is essentially separable from technology. The business model system describes cause and effect relationships, and is both cognitive and real (Cass Business School, 2020). It can be used to understand the economic dynamics of firms and industries, and it is also a 'device' that can assist managers and policy makers in thinking about their world. Challenging many widely held views about business models because it stresses the model dimension, is intellectually robust and is built on firm philosophical and practical foundations (Cass Business School, 2020). In the 21st century technology and business models are like "brother" and "sister" – they are independent, but have to evolve together.

The first part of the paper will present what 21st technologies are, current literature findings and that business models evolved with the help of technology.

Further, in the second part of the paper, the results of an exploratory study will be presented. The aim of this study is to answer the following questions: What modern technologies are used in companies? What operations / technologies are present in the daily activities? What technologies are seen as perspective to be developed in the next 25 years? What industries will be most affected in the future?

Literature Review

If we look at the discourse landscape on the subject of 'new technologies' from afar, two surveys that characterize the picture emerge: on the one hand we see a massive discourse that starts directly with the new technical phenomena and fluctuating between science and fiction. Tendencies of current research extrapolated so that the picture of a technologically completely dominated and permeated world emerges (Kogge, 2008).

On the other hand, there are the critical commentators who revise the technological discourse. They examine concepts and figures of thought, and show in which historical contexts the

current concepts, such as the molecular machine, and the underlying figures of thought of atomism, reductionism and determinism stand (Kogge, 2008).

Considering the two perspectives, in the end we know that new technologies are changing everything around us, from the way we live, work, communicate, travel or solve problems and invent new things (Tohanean et al., 2018).

The contribution of new technology to economic growth can only be realized when and if the new technology is widely used (Hall and Khan, 2004).

Donald Trump, one of the richest men in the world, was asked on a TV show what would he do if he lost everything overnight and suddenly became poor? He said without hesitation that he would go to an internet café and create a network marketing company in a very short time by sending countless emails. The subsequent laughter from the audience were acknowledged by Donald Trump and with a look at the people, in perfectly calm sentence he answered: "That's why I'm sitting up here, and all of you down there" (Trump, 2006).

Technology is not sitting, it is changing, and it does very fast. Same applies to companies, to classic ways of doing business or to define the term "business model". Michael Lewis refers to the phrase business model as "a term of art" (Lewis, 2000). And like art itself, it's one of those things many people feel they can recognize when they see it but can't quite define. That's less surprising than it seems because how people define the term really depends on how they're using it. Lewis, for example, offers up the simplest of definitions — "All it really meant was how you planned to make money" — to make a simple point about the dot.com bubble, obvious now, but fairly prescient when he was writing at its height, in the fall of 1999. The term, he says dismissively, was "central to the Internet boom; it glorified all manner of half-baked plans ... The "business model" for Microsoft, for instance, was to sell software for 120 bucks a piece that cost fifty cents to manufacture ... The business model of most Internet companies was to attract huge crowds of people to a web site, and then sell others the chance to advertise products to the crowds" (Ovans, 2015).

Business Models of the 21st century may vary to a lot of terms like: digitalization, big data, nanotechnologies, electric vehicles, industry 4.0, 3D printing, augmented reality, social media or blockchain. In each series of lectures on "Digitization" or "Industry 4.0" companies like Amazon, Google, Airbnb, Uber, which are almost like prayer wheels, are listed as dazzling examples of the changes from the classical business model to a new one (Muller, 2018). 21st century related technologies are not only changing the nature and role of companies. They also change the interaction with customers and have an impact on society (Morgan, 2018).

The relationship between businesses and consumers will change from a one-way street to a freeway on which data is exchanged in both directions. While consumers were previously primarily passive users of products and services, their data now contributes to the companies functioning and continuous business model development (Morgan, 2018).

This development enables companies to have continuous innovation and development. However, this requires a trusting, partnership-based relationship between the actors that goes far beyond the purely functional value of products. Common goals and values will shape the relationship between the company and the individual customer much more strongly in the future (Morgan, 2018). This requires the right management in the company, the correct technical tools to evolve and the courage to change / adapt the existing business model or to create a new one (Tohanean, 2019).

Research Methodology

The authors use a descriptive research method, namely the case study, a quantitative research method for online questionnaires and a qualitative research method, namely face to face interviews.

The case study presents a complex analysis of a contemporary phenomenon. The literature of the past shows several types of this research method. Yin (1994), as cited in Tellis (1997),

mentioned three categories: descriptive, exploratory, and explanatory. Yin's approach is closely aligned with a realistic-positivistic approach, since he conceptualizes this research method as a form of social science (Harrison et al., 2017).

The case study was used to understand and learn about a company's process and actions when "new technologies" occur. In order to gain a comprehensive understanding of the case, the data was collected by examining various documents such as "The Global Innovation Index 2019", "The Best Business Model In The World" (Forbes, 2019), "The Art and Science of Key Risk Indicators: A Case Study Analysis" (Poole College of Management, 2019), "The Global Entrepreneurship Monitor 2019/ 2020" (Global Entrepreneurship Monitor, 2020) or "The Global Competitiveness Report 2019" (World Economic Forum, 2020).

The individual interview is a valuable method of gaining insight into people's perceptions, understandings and experiences of a given phenomenon and can contribute to in-depth data collection (Frances et al., 2009).

To achieve the goals of the paper and verify the literature we apply a series of offline interviews with a few of local entrepreneurs, from technology-based companies or domains such as ALTRAN, Amerilex, National House of Public Pensions, The Bucharest University of Economic Studies and RO Distribution 2000. Online surveys were more than 100 respondents from international business market, such as BRD, Continental, Deloitte, Duvenbeck, IBM, Microsoft, OMV, Oracle and Renault – from all over the world: Romania, Germany, Belgium, United States of Amerika or India. All of them answer to a series of questions regarding innovation, acceptance of technology, knowledge of the concept of modern technology and other relevant subjects which shows us the level of usage of modern technology, implication of digital transformation, the level of digital knowledge in every level of a company.

The interviews were conducted over a period of 6 months from September 2019 to February 2020. Part of the interviews took place personally at the company's headquarters, but the majority were found online via Skype or phone.

The size of the companies interviewed according to the number of employees is as follows: 28,9% (1 to 50 employees), 8,9% (50 to 100 employees), 24,4% (100 to 500 employees) and 37,8% (more than 500 employees).

The interviewed companies according to the field of activity is as follows: 31% (IT), 13% (Consultancy), 11% (Manufacturing), 9% (Healthcare), 7% (Transportation, Logistics, Automotive, Education and Banking) and 3% (Government, Public Administration and Research).

The results are used to understand the adoption or acceptance of new technologies, to analyze different aspects of modern technologies and how it is impacting business models.

Results - Modern Technologies and their Impact on Business Models

The history of technology is as old as mankind. The earliest achievements include fire and the hand ax. After humans switched from hunting and gathering to agriculture and animal husbandry at the end of the Stone Age, technology also began to develop more rapidly. Tools and weapons were soon made of bronze, large cities emerged from stone buildings and the wheel made transport easier.

In Greco-Roman antiquity, people went about using iron. They also began to investigate technology and found the lever law and developed the pulley system. The late antique waterwheels form the transition to the Middle Ages, where they were then supplemented by the windmill to do work. Here, agriculture made greater progress with the wheel plow, the horseshoe and the collar, which increased the usable traction of horses. In the military field, armored knights also used the horse and had castles built.

In the Renaissance, cannons and forts took a high peek. During this time, letterpress printing, the discovery of porcelain production, the construction of clocks, microscopes and telescopes, and the associated flourishing of the natural sciences, also took place.

In the Industrial Revolution, spinning and weaving machines were created, which were driven by steam engines, which were heated by hard coal and also made railways and steam ships possible. In the 19th and 20th centuries, machines, film and photography, electricity, plastics, television, computers, and aerospace were created. Most common and used technologies of the 21st century can be seen in table no. 1., considered very important by companies.

Table no. 1 Technologies of the 21 Century

Technology	Big Data	Nanotechnology	Electric Vehicles	3D Printing	Social Media	Blockchain
% of Usage	64%	35,60%	46,70%	75,60%	26,70%	55,60%

Source: Author's own creation

Technology is transforming business models. The topic of business transformation is an old shoe in the business world. It is therefore right to ask the question to what extent technology or digital change represents something new. Indeed, in the past there have been some major developments that have brought about global business models, but each time based on physical products. This is the big difference from what we have seen recently and what we call technology change: we are dealing with an information revolution.

Business models change because they are driven by information. Uber and Airbnb are common but apt examples. The information factor has left its formerly supportive role and has transformed itself into a significant trade and production good. This has changed the whole paradigm of business IT alignment. IT is no longer subordinate to the business model, but a relationship "Business is IT" is created. Business models have changed scientifically in the past years, with focus on product, solutions or services. Figure no. 1 highlights the main evolution steps.

Having this as a starting point, we want to highlight the use of modern technologies in current companies, what operations are present for the daily activities, what technologies are seen as perspective to be developed in the next 25 years and what industries will be most affected in the future.

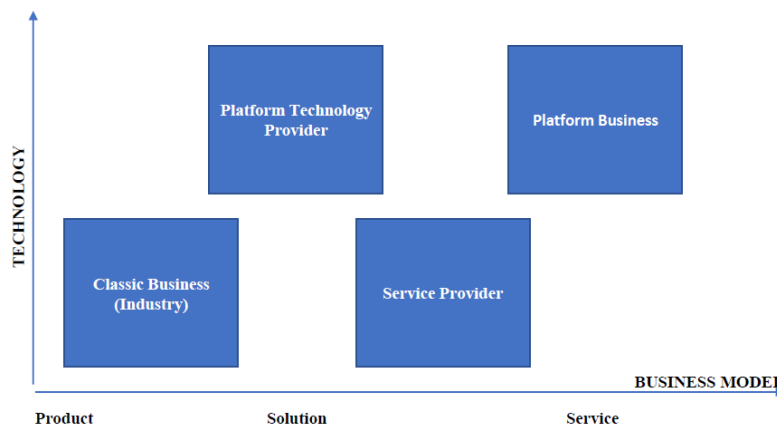


Fig. no. 1 The business model changes through technology

Source: Author's own creation

From robots to modern office equipment like laptops or tablets help companies to progress. Table no. 2 shows the operations that influence the daily work in a company

Table no. 2 Technological aspects that influence the daily work in a company

Operations / Processes / Technologies / Gadgets	Part of daily work		
	a lot	little	not
Robots	13,33%	11,11%	75,55%
Internet	88,88%	8,88%	2,22%
Telework	62,22%	22,22%	15,55%
Automated Processes	33,33%	40%	26,66%
Online Communication (Email, Social Media, Chat Services etc.)	88,88%	6,66%	4,44%
IT Hardware (Laptop, Smartphone, Tablet etc.)	93,30%	4,44%	2,22%

Source: Author's own creation

A clear aspect that has to be underlined is the fact that the knowledge and presence of technologies is a key benefit to business models. Terms “digitalization” or “digital transformation” are familiar in each company, only 6,7% do not understand the concept. More den 53% of the interviewed companies prefer to work online, more direct prefer a digital business model and 98% consider that technology brings a competitive advantage when used in the company. Technology grows every day and is adapting quick. Figure no. 2 shows the technology development of the next 25 years.

In our opinion, the complete transformation of the existing business world is still in its infancy. Exceptions prove the rule. However, the full potential of technological or transformation is far from being exhausted.

What we can currently observe much more are new players in different markets. New business models open up new markets in which the time and structural inhibitions are significantly lower than in traditional sales areas. A good example is music distribution: a classic company needs a local office with shop rental, employees, suppliers and other factors. Business models like Spotify's enable fully digital sales and turn the industry upside down. Due to the lower entry hurdles, these market participants can act more volatile, but are also shorter-lived.

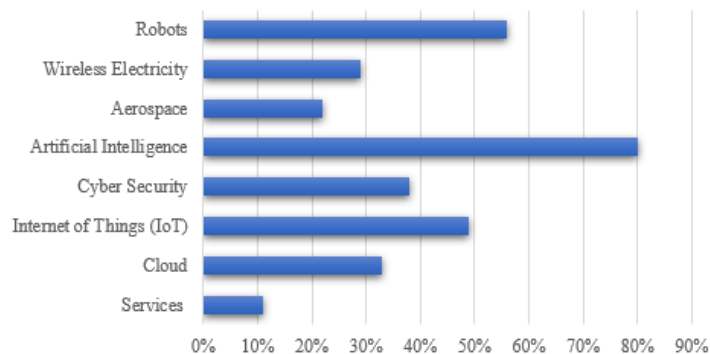


Fig. no. 2 Technology development over the next 25 years

Source: Author's own creation

In this context, existing companies almost instinctively emphasize their traditional core competencies. Since a new business model cannot be implemented overnight, this reaction is

also the simplest and best alternative, at least in the short term. In a long term many domains and industries will be affected by technology and change. Figure no. 3 shows an overview of such impact.

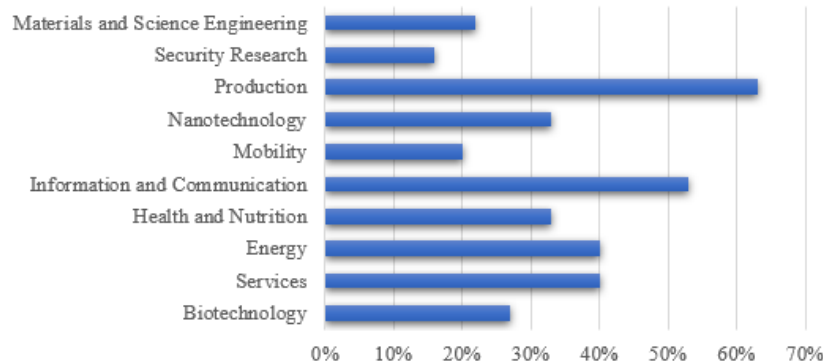


Fig. no. 3 Industry / domain will be most affected by technology in the future

Source: Author's own creation

How can it be determined that the business model in its current form is no longer sustainable? Of course, there are always several indicators, but: Whenever a company no longer grows or cannot grow in its customer base, stagnation occurs. Standing still here is a step backwards and a clear sign that the business model is no longer future-proof and has to be updated or changed to a more technology oriented one.

Conclusions

Changing business models are also inherent in changing company types. This requires flexibility and will lead to companies increasingly having to reform themselves into temporary interest and cooperation associations. The relationship between these associations is largely determined by their merchandise: information. The entire value chain will soon increasingly make a decentralized contribution to the product itself, which in turn has extremely dynamic and short-cycle effects.

Future laws and ordinances have to be adapted to this, since they face the challenge of reconciling virtual information trade with physical reality. The key question will be whether traditionally organized entities such as governments, institutions and regulators are capable of timely change - and whether they even have the need for digital transformation in mind. Technology is here, it changes every day, it is impacting all companies, changing and creating new business models – we are responsible how we answer to it.

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CLUSTERING ANALYSIS ON NEWS FROM HEALTH OSINT DATA REGARDING CORONAVIRUS-COVID 19

Alexandru Daia¹, Stelian Stancu², Alexandru Vladoi³
and Constantin Ionescu-Tîrgoviște⁴

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

⁴⁾ *“N.C. Paulescu” National Institute of Diabetes, Nutrition and Metabolic Diseases, Romania*

E-mail: alexandru130586@yandex.com; E-mail: stelian.stancu@csie.ase.ro;

E-mail: alexvladoi@gmail.com; E-mail: cit@paulescu.ro

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Abstract

Our primary goal was to detect clusters via gensim libraries in news data consisting of information regarding health and threats. We identified clusters for the periods corresponding: i) January 2006 until the end of 2019, as December 2019 is considered the first month in which information about CORONVIRUS COVID-19 was made public; ii) between the 1st of January 2019 and 31st December 2019; and iii) between the 31st of December 2019 and the 14th of April 2020. We conducted experiments using natural language on open source intelligence data from a provider specialized in business risk intelligence and cyberthreat awareness.

Keywords

clustering, health data, covid, news, machine learning, osint

JEL Classification

C55, G40

Introduction

As we progress in a constant increasing globalized world, for the field of Economics and behavioural science, news and the impact of news becomes more and more important. News and globalization, as Boyd-Barrett and Rantanen (1998) show, “are at the heart of modern capitalism”. Some scholars state that modern globalization has “started before modernity, or modernity just transformed the nature of globalization”. Technological breakthroughs, telecommunication and news are present in our daily lives. Regardless of when this process

has started or how it came about, today's world economies are to some extent connected to each other.

Open source data is an essential building block of financial and political affairs both foreign and domestic. We can therefore argue that news is nothing more than a commodity, and to be treated as such. This commodity keeps us informed, shapes our view on the world and helps us make choices and take decisions. It defines the way we respond to questions and which topics we perceive as being important. News can be represented by information we receive from various channels, it can be any number of platforms that we interact on and engage with on a daily basis.

The underlying assumption behind the proposed analysis, is that major global disruption events, skew the news flow towards certain topics, that we define as clusters. We analyse the news flow on the above-mentioned platforms to test our theory and measure the impact of the virus on information flow. News, the propensity and volume of news influences policy, economic behaviour and markets, and at the same time, economic behaviour, markets and events influence the news.

The rapid spread of the virus causes still significant public attention. A pandemic is the worldwide spread of a new disease, as defined by the world health organisation (WHO). COVID-19 was declared by the WHO a pandemic, meaning the virus has spread around the world, and most people do not have immunity against it. The global media and news databanks are flooding with new information on the virus. As governments around the world struggle to identify policies to combat the virus, the communication link to the general population is of extraordinary importance. We can conclude that the media has a significant role in the fighting and crisis managing for the public and government institutions alike. To note is that misleading or incorrect information can have negative effects on the transmission of the virus and its impact on the public. A focus on the transmission of information and activities around information share is necessary, in order for all stakeholders to understand the situation.

Review of the scientific literature

In the last years, significant research has been published using named entity recognition and topic modelling. Hu et. al. (2019) provide a short overview on the method. Topic models are useful tools for understanding large sets of information. Numerous variations of topic models exist, as we will show below, there are a number of applications and variations of models that can be applied to measure correlations between words into a topic model.

Vavliakis et. al. (2013) use the two techniques to investigate important online or real life events from large textual document streams, they propose that an event triggers discussion and comments on the internet and define an efficient methodology for performing event detection from large time-stamped web document streams.

Abinaya and Winster (2014) show that people use social networks, personal information and significant events that occur all over the world. News broadcasters share these posts, while the users discuss those events and post their reviews or repost. They assume that an event is temporal in nature and it changes over time. They use visual text analysis system to provide temporal views of changes that occur on the event. They propose an event identification system to account for the event occurrence and to identify the discussion flow arising from this event. They use topic clustering and named entity recognition to identify the significant events that are available on the web.

Allahyari et al. (2017) use text mining to sort through text data, created in from social networks, patient records, health care data etc. They argue that text data is a good example of unstructured information, which is easily processed and perceived by humans, but is harder for machines to understand.

Liu, Q. et al. (2020) used the same methodology to collect and analyse reports on the COVID-19 virus and how media in China has delivered health information during the COVID-19 crisis. They showed that the Chinese mass media news lags behind when reporting the major developments in the COVID-19 progress. They show how the situation developed from a local, national problem, to a global issue. They suggest further research in the field of the global space but also exploring the impacts of mass media on the readers through sentiment analysis of news data and the influences of misinformation about COVID-19 delivered through the mass media.

Mendez et. al. (2020) studies the territorial and temporal patterns of EU cohesion policy media coverage. They look at the topic content and tone of news using topic modelling and sentiment analysis techniques for the period between 2010 and 2017 across three territorial levels. They find significant differences in the tone used across territorial levels, with national and transnational levels being more negative than the regional level. They conclude that national and transnational media place more emphasis on EU wide news, while local and subnational media focuses on substantive policy topics corresponding with EU policy objectives. They, also find that news develop significantly over time and reacted to external events, such as the euro and migration crises. They conclude that, the tone of cohesion policy news is positive overall suggesting that the media can, in principle, contribute to public support for the policy and the EU more generally.

Khan et al. (2019) use news extraction from Twitter data to extrapolate about real life events. They develop a technique for analyzing Twitter's raw content. After pre-processing of tweets data and pooling of terms they extract topics using available topic modeling algorithm without modifying its core machinery. Then, they count for each topic the estimated number of tweets per day and correlated top hashtags and construct a time series graph for topic analysis. They identify bursty news detection, topic popularity, and people's way to perceiving an event and the transition over time.

Muppala (2019) uses social media for personality identification of social media users. They identify based on personal "news" community interests and topics using LDA and KATE. Experimental results with Twitter and Facebook data demonstrate that the proposed model has achieved promising results.

Zou et al. (2019) uses LDA to organize topics into a hierarchy automatically. They analyze various real-world datasets and conclude that the hierarchical labels are ambiguous and conflicting in some levels. They introduce an altered topic model that aims to incorporate the hierarchical label information into the topic generation process. They use the model on BBC news and Yahoo! Answers datasets show a significant result in impact analysis on these sets using the adjusted topic modeling with more interpretable hierarchical structure.

We base our work and algorithm on Mikhail Salnikov (2018), who describes how clustering in text works. He explains how the same word in different strings can affect clustering. He presents TF-IDF methods with examples using Python. We use these algorithms for our experiment. We use his method to identify the type of clustering we are analysing as well as the most efficient method to use as explained in the chapter to follow.

Methods and experiments

We have collected data regarding news and threats in health domain from the platform "brica.de", a company specialized in threat analysis or cyber-threats in various domains such as health, military, governments, energy, critical infrastructure, geopolitics and other. Total number of news was pretty large consisting of around 20.000 records.

We divided data into three periods:

- January 2006 to December 2019, particularly the 31st of December 2019 as this was the first month information about the novel corona virus COVID-19 was released to the public.

- 1st January 2019 to 31st of December 2019, as a base for difference between 2019 and 2020.

- 31st December 2019 until the 14th of April 2020 (stop date of this paper), to reflect the impact of the virus on information flow.

We used in our experiments spacy. Spacy is a free open-source library for Natural Language Processing in Python programming language. Its functionalities include clustering and name entity recognition.

Findings

After running the experiment, we identified that the shift in news reported happened abruptly, while before COVID-19 the focus was around digitization of health-care, pharmaceutical drugs development and information (fig.nr.1), after the COVID-19 outbreak the news pivoted around organization and research, in hope of fighting the virus (fig.nr.2). This is a clear shift compared to the full year 2019 that focused on cyber attacks and health-care issues regarding security and protection (fig.nr.3). We identify 4 large topics for each period under review. The global security data provider Brica aggregated in real time the COVID-19 outbreak development. The major themes after December 2019 correctly reflect the focus points around the COVID-19 crisis and the global issue it represents. We recommend that future work should address the impact of COVID-19 on the financial market, and how different medias in different countries reacted to this data.



Fig. no. 1 Results for Topics from 2006 until Covid-19 (Dec'19)

Source: own research

It is interesting to see in the second clustering experiment for the year 2019, captures in topic 3 the keyword "virus". Note that at this point, the majority of people were not aware of virus problems. Also, "government", "prison" and "settlement", where "settlement" has the biggest size meaning is reported for the period. The most significant importance in the topic indicates that news captured information about what was occurring or what is expected to occur in the near future.

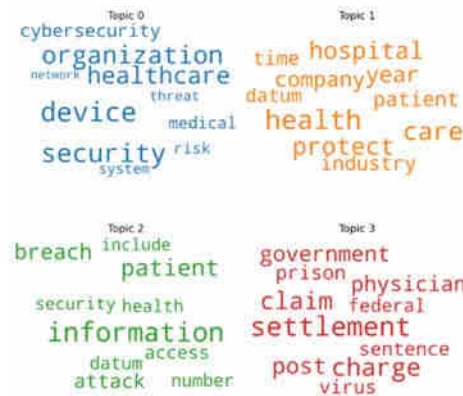


Fig. no. 2 Results for Topics in 2019

Source: own research

Clustering the osint information for the period 31st of December until the 14th of April 2020 (fig.nr.3), we notice that the first topic, Topic 0, is dominated by words like "drug", "physician" and "ambulance". Note the size of the words in the above figures reflect the importance of the word for the topic. It is interesting that these are followed by words such as cancer, patient and health, and hence, no mention of covid-19. We have manually inspected news and we have concluded that there could be two reasons: either patients with cancer face death more often when contaminated with covid-19. Other reason could be that effort now is centered in fighting covid-19 and cancer patients are not helped as before covid-19 pandemics, some reports showed that are even abandoned.

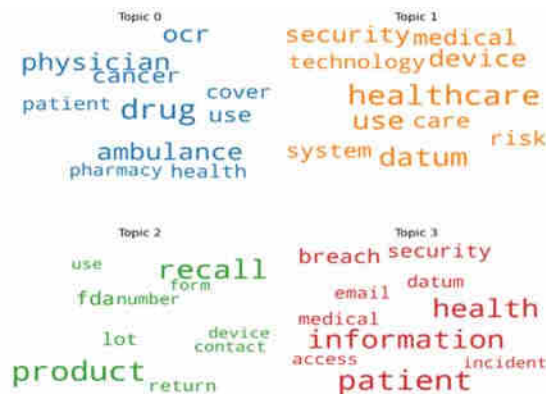


Fig. no. 3 Results for Topics after the COVID-19 outbreak

Source: own research

Conclusions

As we used a large amount of data, consisting of nearly 20.000 news, we can conclude that the clustering method on text data brings us a true big picture on what is happening in the health-care news field.

For the period 2006 to 31 December 2019 we can observe an important distribution in Topic number 0 towards keywords such as „prescription” „, letter” „, drug”, which hold the largest size, and therefore importance. One can argue that over the last 14 years, bureaucracy dominated the healthcare industry, as medical doctors were focused on topics such as

bureaucracy and administration. It is notable that cancer is also reflected for the entire period, as this was a major issue for the year at stake, considering the global fight against this disease. In 2019, we note the presence of topics surrounding “virus” reports, despite the fact that brica only recorded COVID-19 reports starting 31 December 2020. “Government” is also reflected as an important key word, as it shows the importance of the role that national institutions play in health care news.

It is important to note that clustering accurately reflected the news situations of the periods.

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THE RELATIONSHIP BETWEEN E-LEARNING AND SUSTAINABILITY. THE BLOG AS A FUTURE E-LEARNING TOOL

**Bogdan Cristian Onete¹, Sonia Budz², Vanesa Mădălina Vargas³
and Sandra Diana Chița⁴**

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: bogdan.onete@com.ase.ro; E-mail: sonia.budz@yahoo.com;

E-mail: vargas.vanesa13@yahoo.com; E-mail: sandra.chita@yahoo.com

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Abstract

In the last decades, the information technology has developed at a rapid pace, changing people's perceptions, reality and needs. This has created a virtual environment, called social media, which is spread all over the globe and it is in a continuous expansion. The social media covers accessible web tools that people interact with, create, valorise information and have online reactions towards everything that happens around them. Some of these easily accessible web tools are blogs, initially called weblogs, with a short history in comparison with the internet, but very important in terms of social impact. Blogs led to the emergence of new ways of working and training for students and other interested stakeholders. Thus, in the recent years, they registered an increase in student recruitment. Long distance learning generated a high increase in the university environment, in terms of new technologies, elements of "e-learning", "virtual library" and/or "virtual university". The EC (European Commission) sustains this type of education for university studies in the context of creation a European knowledge-based society. The methodological section of this research contains an analysis based on questionnaires responses from University students in Romania, regarding e-learning, blogs, time spent on the internet, and how often do they use e-learning methods. The purpose of this research is to acknowledge to what extent the educational environment is influenced by blogs and how well known and attractive is the "e-learning" concept among Romanian students. As well as the sustainability of learning online. This study is useful for students, professors and all individuals involved in the academic and learning environments.

Keywords

Blog; social; e-learning; students; internet; online.

JEL Classification

L82, L86, I21, O35.

Introduction

The desire for something new and exciting conducted to the emergence of social networks. These networks offer an active virtual environment where people are involved in a continuous traffic, resulted by interactivity and information. The facility of communicating through a simple platform has become increasingly popular, having as a result an explosion of social media, in the context where more than half of the world's population lives in the urban environment (Barriuso and Urbano, 2020). On the web, social media is a complicated term that can have different forms, being often utilized to depict the social aspect or the art of communicating in media; a phrase of two words - that has one meaning. Media means advertising and transmitting ideas or information via different channels, while social implies the interplay between users in a community or group. "Social media" includes communication platforms resulted and maintained by interpersonal interaction between people, utilizing specific procedures or methods.

With the progress of information and ICT (communication technology), mixing teaching portfolios on sites like blogs have become very popular. A blog is a site where entries as text, image, audio or video are posted in a journal style and shared in reverse chronological sequence. A classical blog combines all formats (text, video, images etc.), and refers to other blogs, sites, or other content related to its topic. Teaching portfolios on blogs are, however, not just an exposure of digital assemblies of artefacts. The technical sketch of teaching portfolios on blogs produces opportunities for inquiry, discussion, reflection and feedback in a social web environment and allows collaborative information sharing and learning among users. The technology behind the blogs allows users to record their personal voice, to have critical thinking and to reflect more. It also unfolds a virtual environment to provide or maintain the learning action within a community of users who are connected by some common particularities such as values, interests, identity features, beliefs and goals (Hramiak, 2010; Ramage, 2010). This builds up an OLC (online learning community). Crosta and McConnell (2006) clarifies that 'a LC (learning community) is a cohesive group that incorporates a culture of studying' and the group members have a shared task with regards to learning. The learning method is learner-centred. Other participants such as instructors and mentors may also take part in a learning group and have the role of an administrator or facilitator. Group members act as one to work through and comprehend problems (Whalley, 1998) participating in significant exchange of ideas to build knowledge (Watkins, 2005). Through cooperation, the relationship between the members is consolidated and a powerful bond is created between them (McConnell, 2006; Vrasidas and Zembylas, 2004). Dewey (1938) says that learning is a dynamic process in which students are highly involved. Cognitive development is enhanced by interaction with the environment and others (Vygotsky, 1978). With the aid of social interaction, the more capable learners can lead others into cognitive studying that may not take place if they work separately (Sugar and Bonk, 1998; Barab et al., 2001). The aim of the blog is to 'encourage a reflective, cooperative and dialogic surrounding for academic and professional progresses of the learners (Tang and Lam, 2014). Is imperative for learners to elaborate their own teaching portfolios and effectively participate in interactions through their TP (teaching practicum). To create their portfolios, learners have to upload and save their curriculum, video-lessons, begin discussion and exchange opinions by writing and responding to different comments on the blog.

Theoretical frame of learning

According to Richard E. Mayer, "learning is the relatively permanent change in a person's knowledge or behaviour due to experience. This definition has three components: 1) the duration of the change is long-term rather than short-term; 2) the locus of the change is the content and structure of knowledge in memory or the behaviour of the learner; 3) the cause

of the change is the learner's experience in the environment rather than fatigue, motivation, drugs, physical condition or physiologic intervention".

Learning methods

The Internet is a source of resources for learning anytime, anywhere, which allows extensive flexibility in learning processes. However, face-to-face (F2F) communication is still considered the richest medium because of its potential for intensive interpersonal communication and building social relationships. According to the related literature, both approaches have some limitations. Dziuban, Hartman, Juge, Moskal, and Sorg (2006) and Rivera, McAlister, and Rice (2002) examined student satisfaction while using these learning methods, like F2F, fully online, and blended, and found that the blended learning model produced the highest satisfaction scores. Many research studies further suggest that blended approaches provide the most powerful learning opportunities for students by combining the benefits of both (Gedik, Kiraz and Ozden, 2006; Card and Horton, 2000; Osguthorpe and Graham, 2003). If teachers are going to be prepared for future generations, they need to be trained as confident and competent users of F2F, fully online, and blended learning environments. These are also the requirements for creating new talent pools, as stated by Foerster-Pastor et al. (2019). Researchers have suggested that a great manner to accomplish this aim is to encourage teachers to use Information and Communication Technologies (ICT) in different classroom environments (Adelsberger, Bick and Pawlowski, 2000; Goktas and Demirel, 2012). The current belief is that this can only be achieved through appropriate training which provides ICT related courses designed for the individual's competency level. If that criterion is met, then scholars argue that ICT training should enable prospective teachers to more effectively transfer their knowledge, skills, and experiences to their future students (Brush, Greene and Hart, 2001).

Methods implemented in Romania

To be in trend with technology, most of the Romanian educational institutions implemented several new methods for learning. Pupils and students can access the internet from anywhere, reading important information about their study schedule and downloading files which contain homework, courses, slideshows etc. Most institutions use their own platforms, where courses and information about exams, degrees, schedule etc. is uploaded for students or groups of students, regularly. As well, students can download study materials anytime. Usually, students receive e-mails to verify the platforms. In some cases, the professors send study materials to several students who pass them further to their colleagues through e-mail. Students themselves get enrolled and create groups on different platforms, such as Google, Facebook, LinkedIn, Edmodo, Slack, Skype, Zoom etc., in order to discuss and share study materials between them. With regards to blogs, postgraduate students use them mostly, for their research. All of them are foreign blogs, written in English. Unfortunately, Romanian educational blogs do not exist for the moment that does not belong to any institution. There are just several blogs which offer general information about school.

Methods implemented abroad

In the developed countries of the world, such as Germany, Norway, Denmark, Austria, England, America, Australia etc., students are more open and use often blogs as study materials. Their openness is due to the different educational system (more emphasis on the practical part, to be in accordance with the theoretical one), quality of life, easy access to technology, mentality, perception, long distance. The easier access to technology offers the opportunity to present information in completely new and engaging ways. Their learning environments have changed. Educational institutions offer the infrastructure and technology in order to motivate young people in studying. The Rolex Learning Centre in Lausanne, is a

great example, measuring 20.000 square metres. This Centre aims for a successful symbiosis of creativity and learning through the creation of a modern space that makes it possible for individual and collective learning to flourish. SANAA Architects, Ryue Nishizawa and Kazuyo Sejima, have created a true learning environment. The floor of the Centre bulges accordingly, circular courtyards offer views out and back into the building and do away with the traditional split between the interior and exterior. The library of Lausanne College has similarly rejected outmoded rules to create an environment that encourages self-motivated and self-organized learning. As well as the study materials, students have access to 860 individual workstations, teamwork rooms, a career centre, modern technology, platforms, blogs etc. Students are able to study privately, with the help of professors and lecturers and of course with each other. They operate in a digital environment, with technology playing a central role. Similar conditions are at *The Ørestad College*, in Copenhagen, *The Portsmouth Business School*, UK, *Campus O2*, Graz, in *The University of Wuppertal*, Germany, and so on. Some of the foreign study blogs are futurelearn.com, theelearningcoach.com, open2study.com, distancelearningportal.com etc. They contain information about domains studied in universities.

The digital generations of learning

The new generations have been socialized in a world of digital media, so they are completely prepared regarding the digital study methods. This know-how made students competitive on external markets. A worldwide survey of students and recent graduates commissioned by Cisco found just how ingrained digital culture is with young people. New technology is changing the amount of information students are using, and its form. Therefore, technology is and will be a catalyst of knowledge.

Methodology

The methodology section presents the analysis of the survey type questionnaire answers. This questionnaire was addressed to Romanian students studying in Bucharest, and its purpose was to acknowledge to what extent the Romanian educational environment is affected by blogs and how attractive is the e-learning concept among Romanian students. As well its purpose was to find the future trends according to Romanian students' preferences, and the alignment to other European states. Thus far, blogs were less attractive as E-Learning instruments, and were used for personal purposes.

In 2016, Romania had 531.590 students, which 464.650 were studying in public institutions. In Bucharest were studying 172.038 students in the same year.

The number of faculties was 560, including Bucharest with 159.

General information about respondents

The number of respondents was 129. They are students who attend bachelor, master, MBA, and PhD. studies within the capital of Romania educational institutions. The most of them are attending master studies (48.8%) and the least of them MBA studies (4.6%). The ones who attend bachelor and PhD. studies have an equal percentage (23.3%). The general specializations they are pursuing are Economy (37.2%), Business Administration (11.6%), Engineering (23.3%), Science (9.3 %), Legal (7%), Marketing (4.7%), History (2.3%), Arts (2.3%), Human Resources (2.3%). Most of them have opted for campus learning (81.4%), the rest for distance learning (18,6%). Their age category is between 18-25 years (25.6%), 26-35 years (67.4%), and over 35 years old (7%). The majority of them are from the middle class (83.7%), followed by the superior class (11.6%), and the inferior class (7%).

Use of internet and blogs as e-learning tools analysis

According to figure no. 1, most of the respondents are using the internet between 4 and 7 hours per day (53.5%), followed by the ones who use it 1-3 h per day (25.6%), over 7 h per day (16.3%) and less than 1 h (4.7%). The preferred devices in accessing the internet are the

smartphones (64%), followed by the laptops or PCs (36%). None of the students is using a tablet. The preferred study instruments are the modern, digital ones, including blogs (19%), due to technology and younger generations.

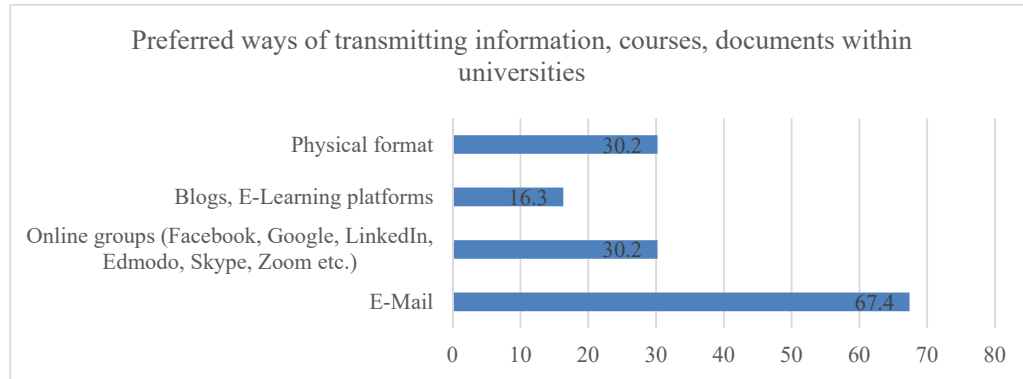


Fig. no. 1 Preferred ways of transmitting information within universities

Source: Author's own research

According to the figure above, the primary way of transmitting information, courses, documents and other study materials is via e-mail (47%). The majority of universities in Romania are using the e-mail as the primary tool of communication and distribution. Unfortunately, blogs are at the bottom of the list (11%).

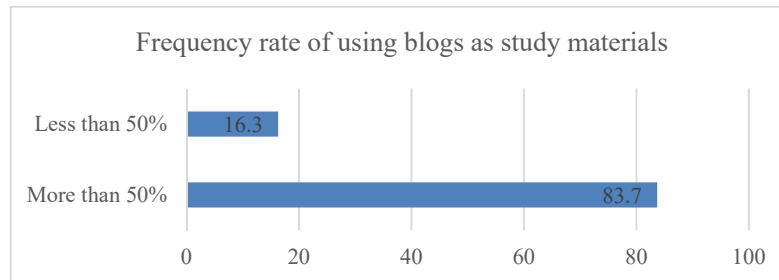


Fig. no. 2 Frequency rate of using blogs as study materials

Source: Author's own research

From the chart above results that students use blogs as study materials, but not necessarily for their exams, but rather for personal development and purposes.

Respondents' preferences

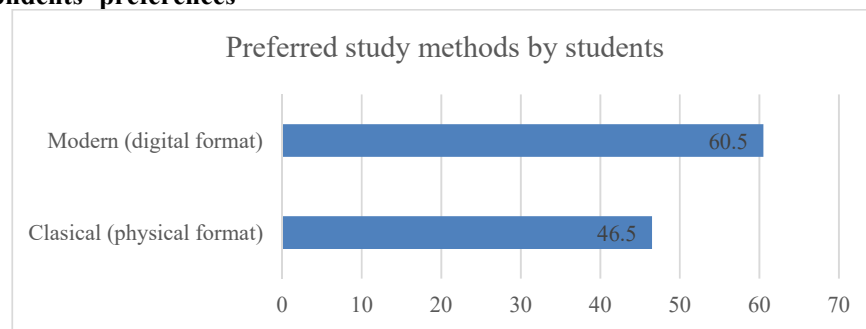


Fig. no. 3 Preferred study methods

Source: Author's own research

According to the values related above, Romanian students desire the modern methods for study being more interactive and attractive.

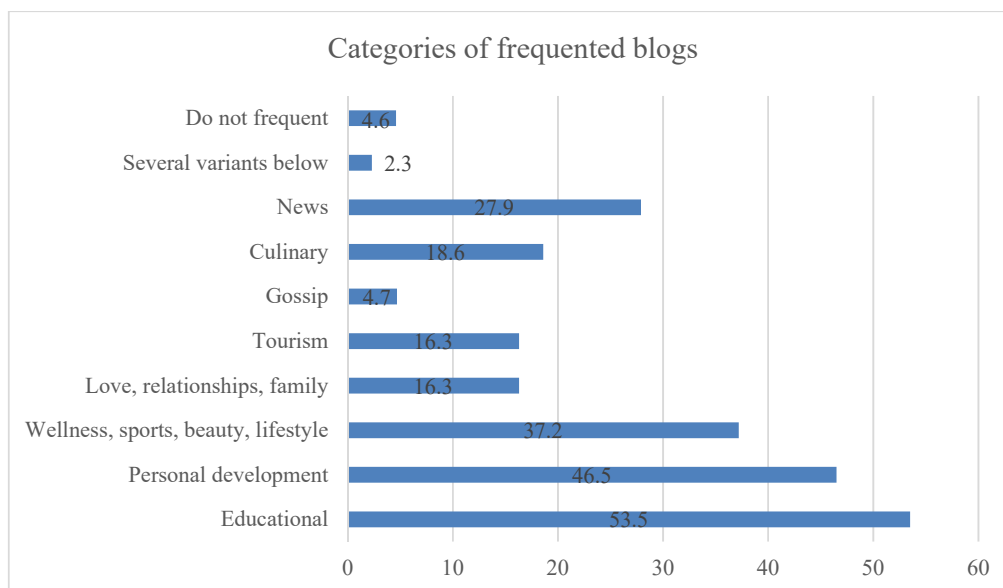


Fig. no. 4 Categories of frequented blogs

Source: Author's own research

From the values observed in the figure above, it can be deducted that students in Romania prefer educational blogs the most (24%), followed by the ones that contain personal development information (21%), and wellness, lifestyle (16%). The least preferred are the ones with gossip (2%). This means that they are interested in personal growth and life improvement.

Conclusions

To summarize, Romanian students use blogs for personal development and growth rather than university studies or matters. Usually, universities opt for e-mail or online platforms in order to distribute the courses and study materials. Some of them recommend different external blogs, for additional information and completion. But for the moment, the present infrastructure and conditions do not offer the opportunity for students to interact constantly with technology inside of the campus and apart from their own devices.

Blogs are perceived more like sites which are outside the university sphere and as a relaxing reading, in their spare time. This happens due to most bloggers, who are ordinary people. Some of them not being related with the university field at all.

In comparison with other European countries, many Romanian universities opt for the classical teaching methods, especially the technical ones, which is rarer abroad.

Blogs and E-Learning platforms are known among students but are not taken seriously as study materials or instruments due to the lack of information in this regard. Exceptions are those who are specialized in these domains and try to gather additional information for oneself.

Regarding future trends, blogs could be the future for studying. Romanian students are open to new and fun ways to study, that stimulates their mind and thinking. As well as helping them to memorize quickly interesting information easier, due to blogs' interactive nature. The new generations are more accustomed with the digital era. Therefore, the demand in this direction

will increase. Besides, the more will become sustainable aware, the merrier will embrace this kind of learning, realising it can be a method of reducing the use of natural resources by using less the car or other means of transportation. Students are sensitive to this kind of details and will incline being more active in the learning process.

In order to attract an increased number of students into E-Learning blogs, Romanian universities should enrich their campuses with different devices that offer interactive, fun experiences, along with the construction of different blogs. As well as to encourage the students within the same university or not, from different sections to create several blogs in this regard, promoting teamwork as well. Romania could easily align with other European states, due to its young great resources that are ready to withstand any challenges.

Acknowledgement

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ECONOMETRIC MODELING OF INTELLIGENT REPORTING

Rodica Pripoaie¹, Riana Iren Radu², Andrei-Mirel Florea³ and Oana Daniela Lupoae⁴

^{1) 2) 3) 4)} “Dunarea de Jos” University of Galati, Romania

E-mail: rodicapripoaie@yahoo.com; E-mail: raduriana@gmail.com;

E-mail: floreaandreim@yahoo.com

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Abstract

Creating a smart model for processing financial statements in order to provide all the necessary aspects to the managers and to help them with their informational needs represents a current challenge for specialists. The global dimension of the business requires quick decisions, so the information analysis at corporate can represent a hindrance in taking a strategically substantiated decision. In this context, it has been proposed a model for transforming the financial information reported to the monitoring and verification tax authorities in financial management information useful in preventive business management. The research done is useful in the academic field and in the business environment. The results will be supplemented by new tests, by verifying the functioning of the model in certain real situations

Keywords

information, smart model, managerial performance, financial reporting

JEL Classification

M21

Introduction

The use of internet as a means for disseminating financial information is a phenomenon in full development at present. Internet of Things (IoT) has become the main source of information for the financial statement users. In this context, for the international business environment, the creation of a smart model of adapting the information from the financial statements to the informational needs of the managers is a challenge approached by specialists in various reference works. Thereby, we propose to issue a model for transforming the financial information available on-line to financial management information useful in preventive business management. At international level, the business entities have difficulties

in the interpretation of the reporting, appealing often to their own informational system for generating the reports necessary for the management decision process. The global dimension of the business requires quick decisions, fact for which the information analysis at corporate level can represent a hindrance in taking a strategically substantiated decision. In practice, there is an ever-growing talk about real time management.

Another aspect of major interest for management is represented by the economic reality of the company's performance in dynamics, for a historical period of 3 years. This reality is concisely evaluated based on the reports on the turnover, commercial margin and added value. The added value analysis represents a complex tool integrating the workforce productivity analysis in relation to work factor remuneration, forecast capacity analysis based on cash flow and empowerment analysis of the fixed owed assets, through technological upgrade.

The proposed model deals with the integration of these analyses through the weight of the financial indicators, reported through the financial statements, which would allow obtaining for a quality prognosis.

Literature Review

Despite the fact that internet represents a means more and more used for the dissemination of the financial information, the academic researches on the usage of internet in the financial reporting are still in the incipient phase in emergent economies. The use of internet as a means of communication influences significantly the financial reporting practices at company level (Khadaroo, 2005).

According to Munter and Robinson (1999), internet and information technology have transformed the way by which information is disseminated to and demanded by users. The world must be prepared to meet the future challenges with innovative financial reporting that continues to meet the needs of those who participate in the capital markets and who give companies the access to capital that is so vital in today's global marketplace.

Internet financial reporting has become a popular practice of communicating with stakeholders. The use of internet enables companies to provide information to global users. Using the Internet allows a company to deliver on-line a large volume of information which users can access on demand, in function of their particular area of interest (Bonson & Escobar, 2006).

The first studies about the financial reporting on internet have been published in 1996 when the internet was first becoming used for advertising and commercial purposes (Allam & Lymer, 2003). Regarding the content of studies about e-financial reporting we can observe that these are descriptive and exploratory in nature. These studies focused on the existence of companies' websites and whether these companies posted some types of financial information on their Websites (Khan & Ismail, 2011).

Most of the studies on e-financial reporting were conducted in developed countries such as America, United Kingdom or Germany, both very few studies have been conducted in developing countries (Dolinšek, 2014).

Other studies dealt with recognizing factors which might determine noticeable differences between companies regarding the internet financial reporting.

In relation to the Internet as a medium for financial disclosure, the management can reduce the agency problem and improve information asymmetry due to its unlimited space, wide coverage, easy-access reports, and real-time information (Arussi et al, 2009).

In the context of internet financial reporting, smart business intelligence enables managers of companies to access, analyses, and use available internet financial reporting data for decision making. It is used for long-term strategic planning, short-term tactical analysis, and managing daily operational business activities. As smart business intelligence could be defined as the ability of a company to make meaningful use of available data (Kimble & Milolidakis, 2015).

The smart business intelligence could play an important role in improving the profitability of the company by finding new opportunities and identify potential threats, revealing new business visions and improving decision making processes (Xia & Gong, 2014). At present, smart business solutions mostly focus on structured and internal data of company. Our paper seeks to contribute to the literature by proposing a new model of using external available financial data.

Research methodology

The research aims to quantify the financial information reported by the business entities through econometric methods, in order to obtain the business characteristics needed to apply the medium and long term development strategies. It has been evaluated the financial information reported by Top 55 business entities from Bucharest - Ilfov Area, between 2016-2018. The period 2016-2018 represented for Romania a favourable macroeconomic climate, with economic growth, inflation stabilized and policies for development sustainable.

The analysis of those 55 entities generated information on the dynamics of turnover (CA), achieved income and profit (financial section of the reporting), as well as the analysis on accumulation of capital and assets.

This research methodology has enabled the development of model and permitted to obtain a relevant analysis for all 55 business entities, by using EViews 10.

Elaboration of model with EViews 10

1.The transformation of the financial information corresponding to the opportunity analysis of the target market, criteria-wise segmented

The opportunity analysis deals with obtaining some precise information on business development in certain market segments, through the usage of sale and promotion techniques in the conditions of an insufficiently used surplus of endowments, logistics and human resource. Accordingly, the first step in obtaining a pertinent analysis is determined by the calculation of fixed assets' efficient usage. This calculation can be synthesized by Fixed assets / Turnover (t_{CAF}) ratio, which identifies an empowerment of the assets' usage.

2.The transformation of the financial analysis corresponding to the entity's performance analysis

A pertinent interpretation of the mutations produced within the financial performances supplied by the financial statements imposes a dynamics analysis of the entity's financial performance structure. By analysing the lines' structure from the Profit and Loss Account (financial performance), the structural mutations on the financial performances are highlighted, on one hand, taking as comparison basis the gross result of the fiscal year, as global synthetic indicator, which reflects the performance of the activity as a whole. On the other hand, the level of total income is taken into consideration as the synthetic indicator expressing the volume of the entire activity.

The transformation of the financial information starts from calculating the weights of the operating and financial profit/loss, as follows:

$$GE + GF = 1 \Rightarrow \frac{RE}{RBE} + \frac{RF}{RBE} = 1 \quad (1)$$

where:

GE – entity's economic global performance indicator

GF – entity's financial global performance indicator

RE – the profit/loss of the operational activity

RF – financial profit/loss

RBE – gross profit/loss of the operation

Another aspect related to financial performance is represented for the transformation of the financial – accounting information in business information through the calculation of profitability ratios.

$$\text{Gross margin ratio RMB} = \frac{RBE}{CAN} \times 100 \quad (2)$$

where:

RMB –Gross margin ratio

RBE – Gross profit/loss of the operation

CAN – Net turnover

$$\text{Commercial margin ratio RMC} = \frac{MC}{VM} \times 100 \quad (3)$$

where:

RMC - Commercial margin ratio

MC - Commercial margin

VM - sale of goods

The financial rates of return in relative form reflect how the capital invested in the entity is remunerated. The rates of return on ownership equity and invested capital are usually known. The rate of return on ownership equity can be expressed through some factors and causes of inter-conditioning within a multiplicative model of the form:

$$ROE = \frac{RNE}{CAN} \times \frac{CAN}{AT} \times \frac{AT}{CP} = \frac{RNE}{CP} \quad (4)$$

where:

ROE – Return on Common Equity

RNE –Net operational profit/loss

CAN – Net turnover

AT –Total assets

CP –Ownership equity

The rate of return on the invested capital reflects the financial performance capitalised by the entity following to the capital invested into the business.

$$RCP = \frac{\text{profit/loss\_before\_taxes\_}\wedge\text{payment\_of\_debts}}{\text{revolving\_working\_capital}} \times 100 \quad (5)$$

The target market opportunity analysis presented above allows the effective usage of the fixed assets hold by the entity in the context of a market potential turned to advantage, based on a business quantified at the turnover level. It results thus a potential turnover to which the entity can aim in the conditions of a medium term strategy, correlated with the macroeconomic climate.

3. Added value analysis

The added value analysis represents a strong tool for managers in assessing the business potency. The added value supposes the quantification of all factors and resources which, although they do not appear in the financial statements, are used by the entity and can produce real benefits to it.

The added value is calculated on average through multiplicative model, as follows:

$$VA = \overline{N_p} \times \overline{W_p} \times \overline{V_a} = \frac{N_{p0} + N_{p1}}{2} \times \frac{Q_{E0} + Q_{E1}}{2} \times \frac{V_{a0} + V_{a1}}{Q_{E0} + Q_{E1}} = \frac{(N_{p0} + N_{p1}) \times (V_{a0} + V_{a1})}{4} \quad (6)$$

where:

VA – added value

Np – personal number

Wp – workforce productivity

Q_E – production of the exercise

V_a – Added value to 1 monetary unit of production exercise

The finance management performance is synthetically analysed according to the following analysis grids:

- $\frac{\overline{V_a}}{\overline{W_p}} > 1 \rightarrow$ the ratio confirms an efficient usage of the productive human resource and capitalization of the competitive advantage

- $0.5 < \frac{\overline{V_a}}{\overline{W_p}} < 1 \rightarrow$ the ratio represents a rational usage of the human resource and an average capitalization of the competitive advantage. It is required an opportunity analysis regarding the necessity of investments in order to increase the added value and its impact in the cash flow

- $\frac{\overline{V_a}}{\overline{W_p}} < 0.5 \rightarrow$ the comparative advantage is not capitalised at optimum level, the company requiring business managerial redesign.

Based on the assumptions expressed at points 4.1, 4.2, 4.3, it can be determined an econometric model which transforms the financial information into business information on performance assessment criteria, quantifying the average added value in average productivity factors through economic and financial regressions and the commercial margin and gross margin ratios, as well RCAF and GE/GF. Through the independents variables GE/GF, RMC/RMB, RCAF and ROE/RCP, the estimated model which can be represented econometrically through the following regression equation, by the Least Squared Multiple Correlation (OLS) is presented in table 1.

Table no. 1 Model OLS-Dependent variable: VAWP

Dependent Variable: VAWP				
Method: Least Squares				
Date: 04/13/20 Time: 10:53				
Sample: 1 55				
Included observations: 55				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1142.490	0.000296	-3856371.	0.0000
GEF	-0.219359	5.97E-08	-3675154.	0.0000
RMCB	4448.183	3.70E-05	1.20E+08	0.0000
RCAF	-0.000111	0.000134	-0.826626	0.4124
ROERCP	0.000199	0.000257	0.772910	0.4432
R-squared	1.000000	Mean dependent var	-884.5609	
Adjusted R-squared	1.000000	S.D. dependent var	23682.81	
S.E. of regression	0.001315	Akaike info criterion	-10.34338	
Sum squared resid	8.65E-05	Schwarz criterion	-10.16090	
Log likelihood	289.4430	Hannan-Quinn criter.	-10.27281	
F-statistic	4.38E+15	Durbin-Watson stat	1.942493	
Prob(F-statistic)	0.000000			

Source: Authors compilation with EViews 10

So, we obtain the following regression equations, with Least Squares Method:

Estimation Equation:

$$VAWP = C(1) + C(2) \times GEF + C(3) \times RMCB + C(4) \times RCAF + C(5) \times ROERCP \quad (7)$$

Substituted Coefficients:

$$\text{VAWP} = -1142.49038814 - 0.219358640155 \times \text{GEF} + 4448.18349048 \times \text{RMCB} - 0.000110887135514 \times \text{RCAF} + 0.000198600091526 \times \text{ROERCP} \quad (8)$$

The actual and forecast values are presented in figure 1.

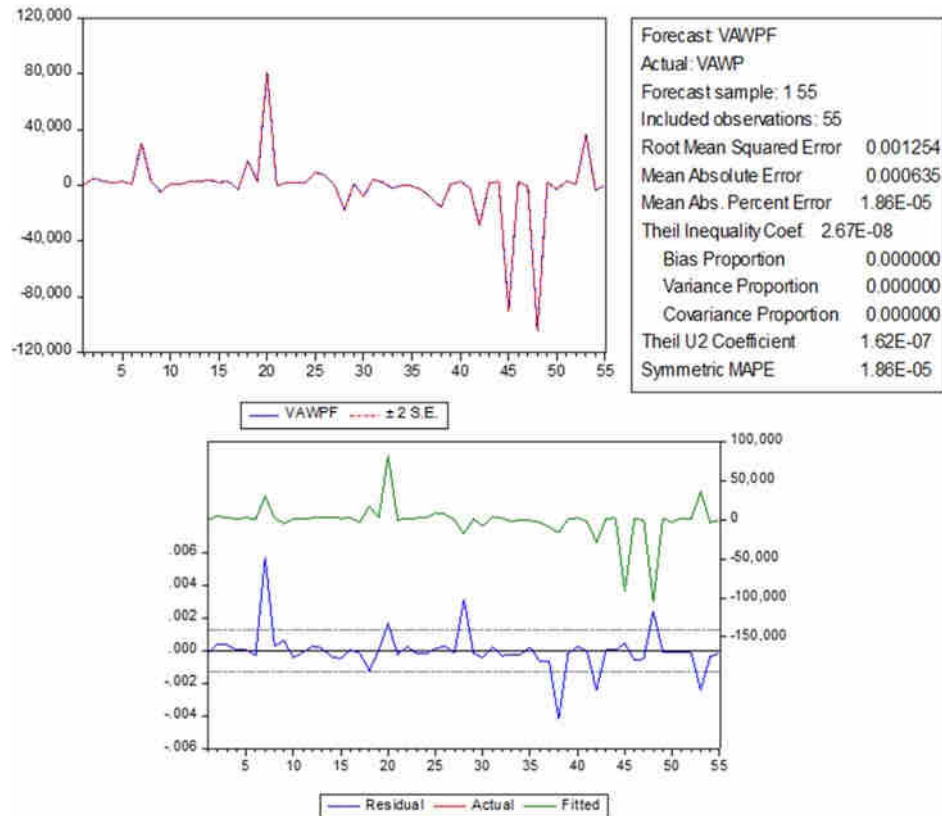


Fig. no. 1 Presentation of the actual and forecast values

Source: Authors compilation with EViews 10

Also, according to the error correlation, in Eviews Workfile on observed it that there is no serial correlation of the errors, and the distribution of residuals is shows in figure 2.

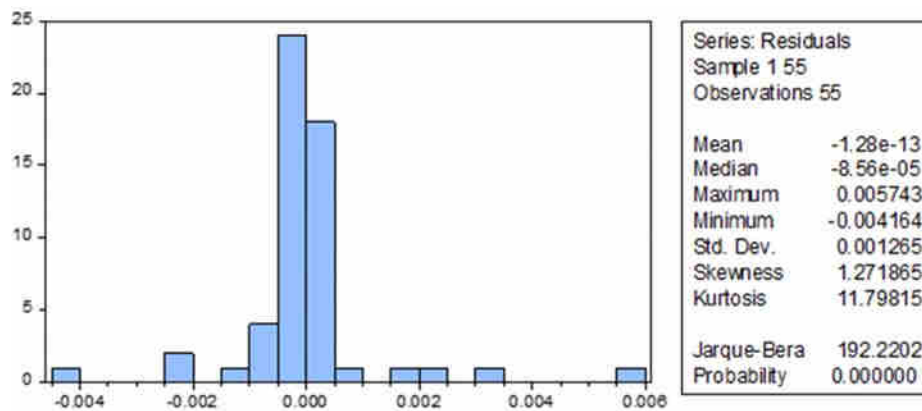


Fig. no. 2 Distribution of residuals

Source: Authors compilation with EViews 10

The model estimated with Eviews 10 is representativeness of 1.00 for “VA/WP”, and the value for test F -statistic is 0,026020, so close to 0 and the errors are normally distributed for the Chi-square (2) statistical test. (Table 2)

Table no. 2 Model homogeneity testing

Breusch-Godfrey Serial Correlation LM Test:					Heteroskedasticity Test: White				
Null hypothesis: No serial correlation up to 2 lags					Null hypothesis: Homoskedasticity				
F-statistic	0.026020	Prob. F(2,48)	0.9743		F-statistic	12.31421	Prob. F(14,40)	0.0000	
Obs*R-squared	0.059565	Prob. Chi-Square(2)	0.9707		Obs*R-squared	44.64213	Prob. Chi-Square(14)	0.0000	
					Scaled explained SS	199.1951	Prob. Chi-Square(14)	0.0000	
Test Equation:					Test Equation:				
Dependent Variable: RESID					Dependent Variable: RESID^2				
Method: Least Squares					Method: Least Squares				
Date: 04/13/20 Time: 11:12					Date: 04/13/20 Time: 12:24				
Sample: 1 55					Sample: 1 55				
Included observations: 55					Included observations: 55				
Presample missing value lagged residuals set to zero.									
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.34E-05	0.000314	-0.042643	0.9662	C	-1.93E-06	1.46E-06	-1.326096	0.1923
GEF	3.62E-09	6.33E-08	0.057232	0.9546	GEF^2	2.05E-13	1.03E-13	1.986165	0.0540
RMCB	4.25E-07	3.62E-05	0.011115	0.9912	GEF*RMCB	6.08E-09	6.94E-10	7.319028	0.0000
RCAF	-2.53E-06	0.000139	-0.018211	0.9855	GEF*RCAF	-1.49E-08	1.48E-08	-0.100556	0.9204
ROERCP	1.13E-05	0.000276	0.040621	0.9676	GEF*ROERCP	-1.13E-08	6.24E-09	-1.805917	0.0785
RESID(-1)	0.030939	0.150431	0.205666	0.8379	GEF	5.17E-09	6.35E-09	0.814377	0.4203
RESID(-2)	0.014947	0.152902	0.097756	0.9225	RMCB^2	2.33E-08	5.95E-09	3.910100	0.0004
R-squared	0.001063	Mean dependent var	-1.28E-13		RMCB*RCAF	-5.08E-08	1.33E-07	-0.382688	0.7040
Adjusted R-squared	-0.123762	S.D. dependent var	0.001265		RMCB*ROERCP	-4.37E-07	3.24E-07	-1.348253	0.1848
S.E. of regression	0.001341	Akaike info criterion	-10.27174		RMCB	-9.46E-07	3.58E-07	-2.643056	0.0117
Sum squared resid	6.64E-05	Schwarz criterion	-10.01626		RCAP^2	-6.31E-08	2.22E-07	-0.283605	0.7782
Log likelihood	289.4728	Hannan-Quinn criter.	-10.17294		RCAP*ROERCP	-8.10E-08	4.54E-07	-0.178323	0.8594
F-statistic	0.008673	Durbin-Watson stat	1.999559		RCAF	3.32E-07	8.91E-07	0.373120	0.7110
Prob(F-statistic)	0.999997				ROERCP^2	1.61E-07	4.54E-07	0.355473	0.7241
					ROERCP	2.90E-06	1.62E-06	1.783418	0.0821
					R-squared	0.811675	Mean dependent var	1.57E-06	
					Adjusted R-squared	0.746761	S.D. dependent var	6.31E-06	
					S.E. of regression	2.63E-06	Akaike info criterion	-22.63304	
					Sum squared resid	2.70E-10	Schwarz criterion	-22.08558	
					Log likelihood	637.4086	Hannan-Quinn criter.	-22.42153	
					F-statistic	12.31421	Durbin-Watson stat	2.112346	
					Prob(F-statistic)	0.000000			

Source: Authors compilation with EViews 10

The homogeneity of model is demonstrated based of the following statistical tests: Breusch-Pagan-Godfrey, Harvey, Glejser and Test White.
For the equation analyzed, the recursive coefficients are represented in figure 3.

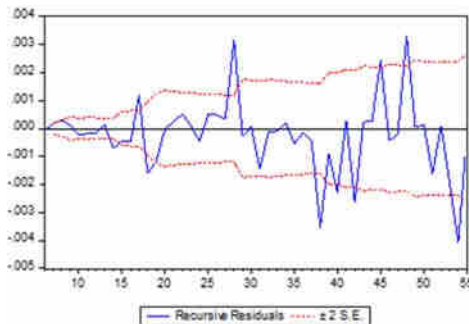


Fig. no. 3 Recursive coefficients

Source: Authors compilation with EViews 10

Using a dynamic forecast, the predicted values and error margins, symbolized by red lines, are shown in figure 4.

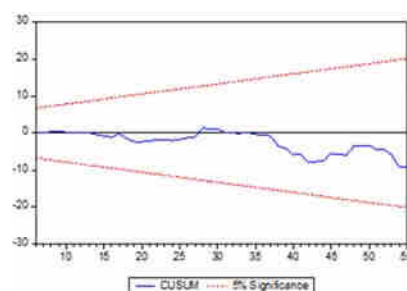


Fig. no. 4 Predicted values and error margins

Source: Authors compilation with EViews 10

According to the statistical results obtained with Eviews 10 it is found that the coefficients of the equation are stable.

Conclusions

The financial system represents an important source of information for the entities' managers, but it must be transformed in a smart way so that to be able to reflect the performance in sustainable terms on a forecast horizon and to confirm to the managers the possibility to build reliable strategies for business development. The model proposed transforms smartly the financial information to analysis elements and work tools necessary for the strategic planning. Through the margin and ratio enclosing grids described in the paper, it can be obtained a fast performance diagnosis, existing the premises of development of an informational model, enclosed in units' ERP model, for smart capitalization of financial information and for the evaluation of the company's status onto the market.

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DOES THE NETWORK AFFECT FIRMS' PERFORMANCE? THE CASE OF ITALIAN AGRI-FOOD SECTOR

Valeria Vannoni¹, Gabriela Boldureanu², Teodora Roman³
and Daniel Boldureanu⁴

¹⁾ Università degli Studi di Perugia, Italy

²⁾³⁾ Alexandru Ioan Cuza University, Iasi, Romania

⁴⁾ Grigore T. Popa University of Medicine and Pharmacy of Iasi, Romania

E-mail: valeria.vannoni@unipg.it; E-mail: gabrivaleanu@yahoo.com;

E-mail: throman@uaic.ro; E-mail: boldureanu@yahoo.com

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Abstract

A flourishing literature recognizes the merits of improving the performance of participants to business networks. This effect can be particularly significant in sectors with high concentration of micro and small firms. This study considers the case of Italian agri-food networks with legal personality.

According to data from Italian Business Register, up to February 2020, we found 23 agri-food networks with legal personality, established in the period 2014-2017 by 172 firms. Using Orbis by BvD database, we collected balance sheet data, from 2011 to 2018, for 30 companies. Through non-parametric statistical analysis, we assessed the performance of these firms based on 12 balance sheet indicators, before and after the entry of companies into a business network.

Results show that the economic indicators of firms had a positive trend after joining the network, but out of the 12 analyzed indicators before and after entering the network, differences are statistically significant just for 4 indicators (Turnover; Shareholders funds; Return on equity, ROE; Return on capital employed, ROCE).

Keywords

Business networks; Firms' performance; Agri-business.

JEL Classification

L14, L25, Q13

Introduction

Aggregations may allow smaller firms to overcome some major difficulties due to their size (Gronum, Verreyne and Tim Kastle, 2012). Networked companies can, in fact, share resources, skills and know-how, thus increasing their competitiveness (Ratajczak-Mrozek, 2013). Benefits for firms joining a business network can be classified into three main categories: strategic and operational advantages; commercial advantages; financial advantages. The joint effect of these benefits should hopefully translate into a better performance of companies.

In Italy, in 2009 a special regulation was introduced for business networks. The legislation, which leaves the parties wide autonomy in defining forms and methods of collaboration, provides for two forms of aggregation: the network-contract (without legal personality) and the network-subject (with legal personality). Law 116/2014 subsequently introduced the particular type of the agricultural network, to encourage aggregation and cooperation between agricultural enterprises and promote processes of reorganization, modernization and development of the agricultural sector.

This study aims to analyze the phenomenon of business networks in the Italian agri-food sector. In particular, the reference is to networks with legal personality and their performances. Following a recent study (2017) by Confindustria (the Italian Association of Industries), Istat (Italian Institute of Statistics) and Retimpresa (Italian Confederal Agency for Business Networks), which highlights a positive 'network effect' on firms' performance, also in terms of turnover and employees, there is the idea of our research.

The paper is organized as follows: the first paragraph is for literature review; the second paragraph is for empirical analysis (methodology and results). The last section concludes by commenting main findings.

Literature review

Many contributions in literature firstly addressed the managerial and governance implications for firms participating in a business network (Hakansson and Ford, 2002; Ritter, Wilkinson and Wesley, 2004; Todeva, 2006; Boldureanu et al., 2016; 2017). However, over the time, academic and professional research has also been very focused on the impact of joining a business network on firms' performance.

Luo and Chen (1997) explore the systematic linkage between networking and firm performance from a business strategy perspective, for Chinese firms. Their findings show that network-based business variables have a profound and positive impact on firm efficiency and growth.

Along the same line, Watson (2007) highlights a significant positive relationship between networking (particularly with formal networks) and both firm survival and, to a lesser extent, growth, but not ROE.

Parker (2008) analyzes the issue of formal business networks, performing an economic analysis to show how formal business networks can improve efficiency and social welfare. The author also derives conditions for the existence and equilibrium size of formal business networks.

Gronum, Verreyne and Tim Kastle (2012) analyzed the role of networks focusing on small and medium-sized enterprise innovation and performance. The authors show that strong, heterogeneous ties improve innovation in SMEs, while connections between network ties and firm performance are more complex as the positive association is mediated by innovation. Consequently, SMEs should only concentrate on cultivating and maintaining networks if they lead directly to improvements in innovation.

Mittal et al. (2019), exploring among different types of business networks, suggest that formal business networks are significantly and positively related to firms' performance.

Over the time, the theme of the business network has been increasingly linked to that one of business innovation and internationalization, as a driver of regional development. The vocation for innovation and internationalization of firms have established themselves as discriminating elements in determining the impact of joining a business network on firms' performance; the adoption of a counterfactual approach in these evaluations could, therefore, be useful to isolate the 'network effect' from the influence exerted by other factors (economic cycle, company size, business location, technology, internalization, access to finance, management skills, etc).

With reference to the specific objective of this research, two interesting studies deserve to be mentioned: the first one is by Cantele, Vernizzi and Ricciardi (2016), the second one is by Compagnucci, Cavicchi and Spigarelli (2019). Cantele, Vernizzi and Ricciardi (2016), through a comparative study, focus precisely on the effect of business network contract, as introduced in Italy from a specific legislation in 2009. The authors outline under what conditions the network contract can be leveraged to improve the ability of the participating firms to face the new global competitive environment.

Compagnucci, Cavicchi and Spigarelli (2019) examine the network contract in the Italian agri-food industry: through a multiple case study approach, the authors highlight that the network contract can bring benefits for companies, while triggering competitiveness, innovation and sustainability at local level.

Furthermore, other studies were conducted on business networks in Italy, with reference to specific sub-sectors of the agri-food, such as the wine sector (La Sala, Silvestri and Contò, 2017).

Empirical analysis

Methodology

The research is based on comparing the financial results of the companies before and after joining the business network, in order to identify whether entering the network positively influences the economic indicators of the firms and to find out which of the economic indicators (12) had a positive, statistically significant evolution.

A number of 30 companies from different regions in Italy were analyzed. Table 1 shows the breakdown of firms by region, while Table 2 presents the distribution of companies according to the year they joined a network.

Table no. 1 The distribution of companies by region

Region	Frequency	Percent
Puglia	9	30.0
Umbria	7	23.3
Veneto	4	13.3
Liguria	3	10.0
Campania	2	6.7
Basilicata	1	3.3
Marche	1	3.3

Sicilia	1	3.3
Toscana	1	3.3
Trentino Alto Adige	1	3.3
Total	30	100.0

Source: Own calculation using Orbis by BvD database.

It is noted that over 50 percent of companies come from two regions: Puglia and Umbria. About the year of joining the business network, the years in which most companies joined the network are 2017 (53.3% of companies) and 2015 (40%).

Table no. 2 The distribution of companies by year of joining the network

Network year	Frequency	Percent
2014	1	3.3
2015	12	40.0
2016	1	3.3
2017	16	53.3
Total	30	100.0

Source: Own calculation using Orbis by BvD database.

The economic indicators analyzed were: Operating revenue (turnover), P/L before tax, P/L for period (Net income), Cash flow, Total assets, Shareholders funds, Current ratio (x), Profit margin (%), ROE using P/L before tax , ROCE using P/L before tax , Solvency ratio (Asset based) (%), Number of employees.

Results

Due to the limited number of firms with available data on Orbis database (30 companies), we perform some non-parametric statistical analysis (Chi square test and ANOVA Friedman test). The companies were divided into two categories, according to the year they joined a business network: the first group, with 2017 as the joining year; the second one with the joining year before 2017 (2014, 2015 and 2016). It was tested whether there are statistically significant differences in the following economic indicators before and after the date of entry into the business network.

The statistical analysis was done on each indicator as follow:

1. Turnover - although between the analyzed years (2014-2018) in the turnover there are statistically significant differences (chi-square value $\chi^2 = 10.895$, $p = 0.028$), a normal thing considering the diversity of the analyzed economic activities, the differences of the turnover are not statistically significant by the network joining year ($p = 0.312$). In conclusion, although the average turnover of the analyzed companies has slightly increased during this period (from 9.568 in 2014 to 9.738 in 2018), this result is not caused by joining the network.

2. P/L before Tax - for this indicator, there are no statistically significant differences bin the observation period 2014-2018 (chi square value $\chi^2 = 4.686$, $p = 0.321$). Also, the year of business network entry does not significantly influences the value of P / L before Tax ($p = 0.261$).
 3. P / L for period [= Net income] - the differences recorded between 2014-2018 years are low and are not statistically significant (chi square value $\chi^2 = 4.648$, $p = 0.325$). The year of joining the business network did not in any way influence the evolution of this indicator ($p = 0.261$).
 4. Cash flow - the differences in the period 2014-2018 year are not statistically significant (chi square value $\chi^2 = 3.733$, $p = 0.443$). Also, the year of network entry does not influence the evolution of this indicator ($p = 0.687$).
 5. Total assests - the differences recorded between 2014-2018 year are not statistically significant (chi square value $\chi^2 = 5.676$, $p = 0.225$). Also, the year of joining the network does not influence the evolution of this indicator ($p = 0.455$).
 6. Shareholders funds - for this indicator, the differences recorded over 2014-2018 years are statistically significant (chi square value $\chi^2 = 23.581$, $p = 0.000$). In this case, the lower values of Shareholders funds are associated with 2014, 2015 and 2016 year and higher values of Shareholders funds with 2017 year ($p = 0.028$). It could beargued that after joining the business network, the shareholders funds had increased, so the shareholders had to bring more capital into the business.
 7. Current ratio - in the case of this indicator, there are no statistically significant differences between the years analyzed 2014-2018 (chi square value $\chi^2 = 1.333$, $p = 0.856$). Also, the year of joining the business network does not significantly influence the current ratio ($p = 0.261$).
 8. Profit margin - the differences between 2014-2018 years are not statistically significant (chi square value $\chi^2 = 4.152$, $p = 0.238$). Also, the year of network entry does not influence the evolution of this indicator ($p = 0.397$).
 9. Return on equity (ROE) – the differences in these years are statistically significant for this satio (chi square value $\chi^2 = 9.420$, $p = 0.024$). In this case lower ROE values are associated with 2014, 2015 and 2016 years and higher ROE values with 2017 year ($p = 0.028$).
 10. Return on capital employed (ROCE) – in the case of this indicator, the differences in these years are statistically significant (chi square value $\chi^2 = 14.779$, $p = 0.005$). In this case lower ROCE values are associated with 2014, 2015 and 2016 years and higher ROCE values with 2017 year ($p = 0.015$).
 11. Solvency ratio - the differences in the period 2014-2018 are very small and not statistically significant (chi square $\chi^2 = 1.129$, $p = 0.875$). The joining year of business network does not influence the solvency ratio ($p = 0.395$).
 12. Number of employees - the differences over 2014-2018 years are not statistically significant (chi square $\chi^2 = 1.973$, $p = 0.741$) for number of employees. Also, the year of joining the business network does not influence the evolution of this indicator ($p = 0.285$).
- Table 3 summarizes results of Chi square analysis

Table no. 3 The value of chi square test

Indicator	Chi square value (χ^2)	p value
Turnover	10.895	$p=0.028$
P/L before Tax	4.686	$p=0.321$

P/L for period	4.648	p=0.325
Cash flow	3.733	p=0.443
Total assests	5.676	p=0.225
Shareholders funds	23.581	p=0.000
Current ratio	1.333	p=0.856
Profit margin	4.152	p=0.238
ROE	9.420	p=0.024
ROCE	14.779	p=0.005
Solvency ratio	1.129	p=0.875
Number of employees	1.973	p=0.741

Source: Own calculation using Orbis by BvD database.

Conclusions

Based on our analysis, we found that the year in which the companies joined the business network did not significantly influence the economic indicators considered. However, we tried to highlight the differences existing in the economic indicators before and after entering the business network. For this purpose, we reported the economic indicators from the joining business network year to the next year of joining business network and obtained new relative indicators. These economic indicators were summed and a global average of new indicators was calculated. Thus, we found that out of the 30 companies, 12 companies (40 %) had better values of the economic indicators after joining the business network, 6 companies (20 %) had worse values of the indicators and for the other 12 companies (40 %), this evolution could not be quantified due to lack of data (table 4).

Table no. 4 The distribution of companies by year of joining the network

The type of company	Frequency	Percentage
Companies with better indicators after joining the network	12	40.0
Companies with worse indicators after joining the network	6	20.0
Companies with no possible data to calculate	12	40.0
Total	30	100.0

Source: Own calculation using Orbis by BvD database.

As the number of companies with better results is double (40%) compared to the companies with worse results (20%), we can conclude that joining the business network can bring better results for firms, although this result is not significant in terms of statistics.

Despite the fact that the economical indicators had a positive evolution after joining the network, out of the 12 indicators analyzed before and after entering the network, only for 4 indicators this difference is statistically significant: Turnover, Shareholders funds, Return on equity (ROE) and Return on capital employed (ROCE).

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DETERMINANTS OF GREEN PRODUCT BUYING DECISION AMONG ROMANIAN CONSUMERS

Mirela Diaconescu¹, Mihaela Constantinescu², Claudia-Elena Țuclea³ and Mihai Diaconescu⁴

¹⁾ *The Bucharest University of Economic Studies, CCREI, Romania*

^{2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: mirela.diaconescu@rei.ase.ro; E-mail: mihaela.constantinescu@mk.ase.ro;

E-mail: claudia.tuclea@com.ase.ro; E-mail: mihai.diaconescu@mk.ase.ro

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Abstract

The study has focused on the Romanian customer's buying decision for green products. To this end, 915 respondents were questioned, for various purposes, such as: perception about green products; importance of being green when buying products/services; description of the buying decision process for green products; factors for adoption of and resistance to green products (enhancers and barriers); and influence factors in choosing the brand in the green products market and their importance level.

The main results show that the Romanian customers are very much interested in environment protection, considering that they can do something to help the environment and not leave it just in the responsibility of others. When take into consideration the green purchasing, customers rely on different factors, such as: quality, long product life, price, and brand.

An important conclusion is that the green purchasing is a financially dependent decision.

Keywords

green purchasing, green consumer, green acquisition, eco products, green product buying decision

JEL Classification

M10, M38

Introduction

The present research aims to identify the main determinants of Romanian consumers' green purchasing decision process.

Green purchasing is a complex way of ethical purchasing decision making behavior and it is considered a form of socially responsible behavior (Joshi and Rahman, 2015). As a social responsible consumer, the green consumer is taking into consideration the public consequences of his private consumption and is trying to use his purchasing power in order to produce social change (Moisander, 2007). The products purchased have a smaller impact on the environment for they are obtained using safer materials for the environment, are recyclable and also require less packaging (Chan and Chai, 2010). A few examples of ecological products would be: organic detergents, energy-efficient light bulbs, herbal substances, organic electronic products, organic food, solar energy, reusable water bottles, alternative and hybrid fuel vehicles, etc.

Academic literature has used terms such as „green purchasing”, „green acquisition” or „adoption of green product” in order to explain the purchasing behavior of products with a low environmental impact.

Green purchasing refers to purchasing ecological products and avoiding environmentally harmful products (Chan, 2001). Green purchasing can be measured both by intention and by actual behavior. The intention of buying green refers to the consumers' desire to buy organic products and identifies the motivational factors that influence the consumers' buying behavior (Ramayah et al., 2010).

Beckford et al. (2010) showed that the intention of buying green is a significant predictor of green buying behavior; purchase intention positively influences the probability of a customer's decision to buy organic products.

Karunarathna et al. (2017) have tried to understand the factors that can influence the green buying behavior that affects the educated young consumers and they have also tried to offer guidelines to the companies in formulating and implementing the ecological and sustainable marketing strategies. The factors identified included social influence, attitude towards the environment, knowledge about the environment, responsibility towards the environment, government initiative and exposure to environmental messages through the media.

Kabadayı et al. (2015) shows the results of a quantitative study on young Turkish consumers regarding how the consumer's guilt, self-monitoring and perceived efficacy of the consumer influence their intention for organic consumption.

Hessami and Yousefi (2013) recommends that, through appropriate advertising and strategic plans, the government and politicians make people aware of issues such as environmental damage, air pollution, global warming, increased e-waste, the consequences of using conventional products, and also of the benefits of using environmentally friendly products. Following the same idea, schools and universities should provide education to entrepreneurs and managers who, in addition to profitability and sales, must pay greater attention to the health of the consumers in the community interest.

The Government, which is the largest purchaser of products and services in any country, must focus its purchases on products that are compatible with the environment and encourage, directly and indirectly, more consumers towards the consumption of environmentally friendly products and services.

The subsequent parts of this paper are as follow: the research methodology section, results and discussions and conclusions and suggestions.

1. Research Methodology

1.1. Research purpose

The present study is focused on Romanian consumers of green products, analyzing their buying decision process, in order to identify the determinants of such a process.

1.2. Objectives

This research is split in three sections, as presented below, each section having a series of secondary objectives:

- a) Perception about green products
- b) Importance of being green when buying products/services
- c) Description of the buying decision process for green products
- d) Factors for adoption of and resistance to green products (enhancers and barriers)
- e) Influence factors in choosing the brand in the green products market and their importance level

1.3. Source of Information

The researched community is represented by Romanian consumers of green products. The observation unit coincides with the survey unit and is represented by the person who decides on and buys green products.

1.4. Data Collection

Research method: data was collected through a face to face survey. The questionnaire had 18 questions, most of them with standardized answers, so as not to overload the respondent. There are, however, a few open-ended questions, just to give the research participant the opportunity to provide as much relevant information as possible. The questionnaire includes both questions directly related to the purpose of this survey, as well as other questions derived from the need to know as much as possible about the researchers' behavior.

The data collection process was carried out by the specialists of the project team, who developed the following specific activities of a direct quantitative research: questionnaire programming, data collection, interview verification, export of the database in Excel / SPSS format. The data was collected in the between 3rd of May - 1st of June, 2019.

Sample size: Being a representative research (both in terms of quantity and population structure), with a maxim margin of error +/- 3%, a confidence level of 95% and an 30% incidence level within the whole community (the share of Romanian consumers of green products), the total sample is 915 people.

The sample structure was determined using the proportionate stratified sampling method, depending on gender (46% male and 54% female), age (11% born before 1965, 38% born between 1966 and 1979, 39% between 1980 and 1995, and 12% born after 1995), education (5% middle school, 44% high school, 29% university, and 22% postgraduate studies) and personal monthly income (43% under 2.500 lei, 44% between 2.500 and 4.500 lei, and 13% with an income over 4.500 lei).

2. Results and discussions

The analysis will be presented accordingly to the research objectives, going from the more general perspective on green products to the more specific determinants of the buying decision process.

2.1. Perception about green products

Considering that both literature and practice make a strong connection between green products usage/consumption and environment protection, we have started our research with testing a series of statements about these two concepts.

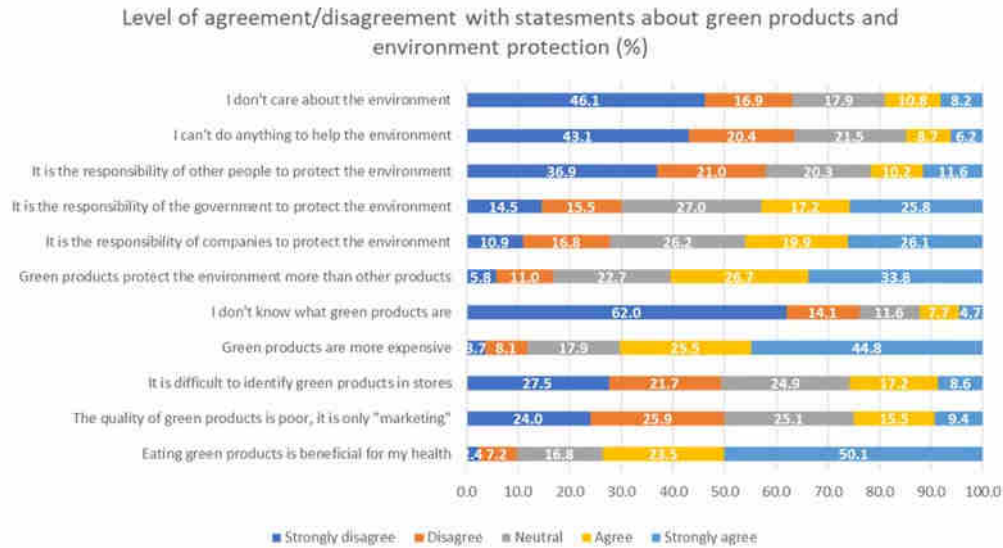


Fig. no. 1 Perception about environment protection and green products (% for level of agreement with each sentence)

Source: Authors' computation

As it can be seen from Figure no. 1, that presents the distribution of respondents on the 5-level scale of agreement, and Table no.1, that shows the average score for level of agreement/disagreement with each sentence, on a scale from -2 to 2 (where 2 means total agreement), respondents are very much interested in environment protection (1st statement), considering that each of them can do something in order to help the environment (2nd statement), not leave it just in the responsibility of others (3rd statement). It's interesting to see that for statements no. 4 and 5 there is a neutral opinion, meaning that people are not yet decided on the role of government and companies when it comes to environment protection.

Table no. 1 Average score for level of agreement/disagreement with each statement, on a scale from -2 to 2 (where 2 means total agreement)

No	Sentence	Average score	Interpretation
1	I don't care about the environment	-0.82	Total disagree
2	I can't do anything to help the environment	-0.85	Total disagree
3	It is the responsibility of other people to protect the environment	-0.62	Total disagree
4	It is the responsibility of the government to protect the environment	0.24	Neutral
5	It is the responsibility of companies to protect the environment	0.33	Neutral
6	Green products protect the environment more than other products	0.72	Mostly agree
7	I don't know what green products are	-1.21	Mostly disagree
8	Green products are more expensive	1.00	Agree
9	It is difficult to identify green products in stores	-0.42	Tend to disagree
10	The quality of green products is poor, it is only "marketing"	-0.40	Tend to disagree
11	Eating green products is beneficial for my health	1.12	Agree

Source: Authors' computation

The statement no.6 makes the connection between environment protection and green products, and we can see that most respondents make a strong correlation between these two aspects.

Before starting the dedicated discussion on green products, we had to make sure that people are familiar with this category, statement no.7 showing us a high level of declared awareness, respondents stating that they know what green products are, fact that helps them identify these products more easily is stores (9th statement).

The statement no.8 lets us understand more on the perceived image of green products, as most respondents agreed to the fact that these products are more expensive, and it's not just marketing there (10th statement), it's about quality.

Although they are perceived as being more difficult to purchase from a financial point of view, the demand for green products exists, as they are associated to health by the majority of consumers (11th statement).

2.2. Importance of being green when buying products/services

Besides the generic factors, such as quality, product life, price and brand, respondents were asked if they take into consideration when buying different products/services also the option of being green. As it can be seen in Table no. 2, there is a slightly important declared level for pollution reduction (3.75 on a scale from 1 to 5), as well as for being friendly to the environment in general (3.53). Other dimensions of green products/services, such as saving energy, reducing the greenhouse effect or being easy to recycle are not so highly evaluated in terms of importance, mostly due to the fact that people are not yet educated in these areas.

Table no. 2 Average score for the importance of different factors taken into consideration when buying products/services

	Factors	Average score
1	Quality	4.53
2	Long product life	3.97
3	Price	3.95
4	Brand	3.76
5	<i>The product helps reduce pollution</i>	3.75
6	<i>The product is environmentally friendly</i>	3.53
7	<i>The product helps to conserve the environment</i>	3.51
8	<i>The product helps to save energy</i>	3.45
9	<i>The product helps to reduce the greenhouse effect</i>	3.28
10	The product is recommended by a friend	3.23
11	<i>The product is easy to recycle</i>	3.18
12	By buying that product I contribute to local economic development	3.11
13	My friends have the same product	2.68
14	The product is fashionable	2.47

Source: Authors' computation

2.3. Description of the buying decision process for green products

In order to understand the factors behind green products purchase, we have to identify the categories of products most often associated with this concept. Table no. 3 shows us that food

is the only category directly linked to green (1st statement), whereas for personal hygiene and household cleaning products there are more people that do not make the association (2nd and 3rd statements). One think is clear: purchasing green products is a financially dependent decision (5th statement).

Table no. 3 Average score for level of agreement/disagreement with each sentence, on a scale from -2 to 2 (where 2 means total agreement)

No.	Sentence	Average score	Interpretation
1	I make green purchases when it comes to food	0.29	Neutral with a tendency to agree
2	I make green purchases when it comes to personal hygiene products	-0.08	Neutral
3	I make green purchases when it comes to household cleaning products	-0.54	Tend to disagree
4	I make green purchases depending on how long I have available for shopping	-0.10	Neutral
5	I make green purchases according to the budget I have	0.72	Tend to agree
6	I make informed decisions (I inform myself) about which green product to buy from all existing ones	0.13	Neutral
7	I decide to buy green products while I am shopping, depending on the information available in the store	0.14	Neutral

Source: Authors' computation

One of the most important steps in the buying decision process is the information activity, where consumers gather as much data as possible from the market, before making their short list of option. As it can be seen from sentences 6th and 7th, for green products there is still a fog over the information process, which can lead to misconceptions and unweighted decisions.

2.4. Factors for adoption of and resistance to green products (enhancers and barriers)

Analyzing the determinants of buying decision process for green products means also identifying what favors and what prevents a higher consumption of such products.

One of the most important enhancers is linked to environment protection and, especially, animals, which can indicate a future USP (Unique Selling Proposition) for communication strategies on this market. Also, on a positive note, respondents mentioned that they feel safer consuming green products and they feel that they are making a change.

As already identified, the most important barrier is related to the higher price that green products have, fact that make consumers turn to other less expensive alternatives. The other factors that discourage respondents from buying green products are linked to the poor knowledge about this category, which makes people choose better known or more popular products from the shelves.

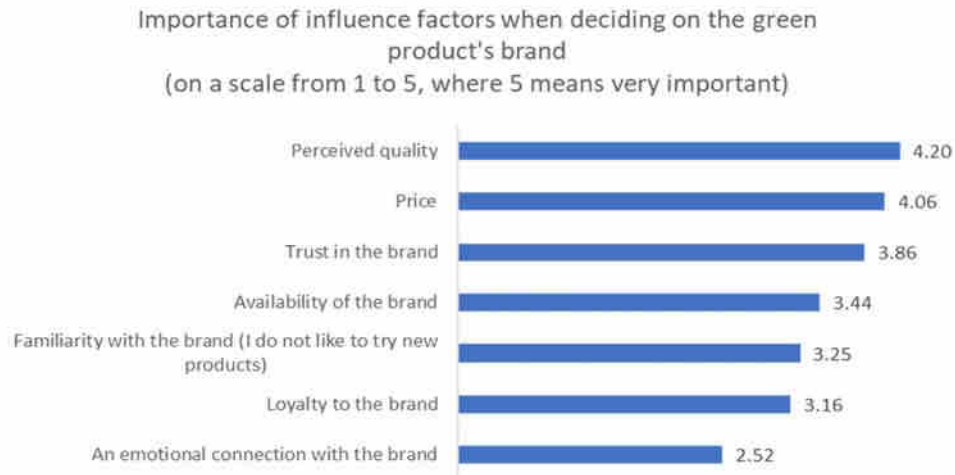
Table no. 4 Enhancers and barriers in buying green products

Enhancers - factors favoring the purchase of eco products -	Barriers - discouraging factors when buying eco products -
I am glad that they are not tested on animals and that they protect the environment	They are very expensive
I feel safe consuming / using such products	I am in a hurry to buy a product quickly
I feel like I'm making a change	I do not realize to what extent a product is truly environmentally friendly
I feel educated	It is too difficult to choose, so I buy a well-known brand
I feel happy	I do not know what the green symbol means
I feel like I belong to a similar community	---

Source: Authors' computation

2.5. Influence factors in choosing the brand in the green products market and their importance level

On a scale from 1 to 5, the most important factors mentioned by respondents were, naturally, quality and price, with an average score higher than 4 (as it can be seen in Figure no. 2). The third most important factor is one with a higher relevance for this product's category – trust in brand. This is linked to what consumers also mentioned as enhancing factor of green product's consumption – feeling safer (see Table no. 4).

**Fig. no. 2 Average importance of factors influencing the decision on green product's brand**

Source: Authors' computation

What is interesting to notice is that this trust does not come from own experience, as respondents are not yet familiarized with or loyal to green product's brands, which automatically excludes also the emotional connection that could have been made with such brands.

Conclusions and suggestions

The study has investigated the Romanian customer's buying decision for green products. The results show that the customers are concerned about the environment and consider that they

can make a noticeable difference through their acquisitions. It is interesting to underlie the idea that Romanian people are not yet decided on the role of government and companies when it comes to environment protection.

As a rule, customers firstly associate green products with food and less with hygiene products. The most important barriers in green acquisitions are price, the lack of information about these products, and a sort of mistrust in communication strategies related to this category. Even though the green products are perceived as more expensive than the „regular” products, there is an important demand for this type of products, as they are associated to health by the majority of consumers.

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CHALLENGES OF TRANSITION FROM A COMPLIANCE-BASED LOGIC TO ONE BASED ON PROACTIVITY. THE CONTRIBUTION OF NEW TRADE BALANCES AT THE LEVEL OF ROMANIA GENERATING PROSPERITY

Dumitru Miron¹ and Ioana Coralia Zavera²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: dumitru.miron@rei.ase.ro; E-mail: zaveraioanacoralia@yahoo.com

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Abstract

As an EU member country for more than 12 years, Romania needs to appropriately perform the following paradigm shifts: commuting from a compliance logic (specific to the EU accession period) to a pro-active one (definitory for integration process); translating from the prevalence of secondary and tertiary sectors of the economy towards a quaternary one; efficient involvement of Romanian companies into regional supply chains. Romania needs a new development model based on maximum technological intensively and increased value added. Based on a deep analysis of the main ways in which the Romanian economy evolved in the context of the European economic integration process, having as main analytical drivers the changes determined by the implementation of the four freedoms of movement specific for the new stage of the single internal market of the European Union, the authors of this paper used the free movement of goods to emphasize how the criteria for efficiency in resource allocation and contribution to economic growth have been respected. The main research objective was to highlight the level at which imports and exports influenced the general economic structure and how a smaller economy with a certain level of openness to the external environment (small, open economy) manifests competitiveness and contributes through the policies implemented to macrostabilisation in the context of economic cycle fluctuations, as well as to the increase of the degree of well-being.

Keywords:

paradigm shift, relational chart, creation and misappropriation of trade, freedoms of movement, macroeconomic balances

JEL Classification

F15, F16

Introduction

In the last decades, the trade has promoted the creation of competitive advantages, of the fairest distribution of the income increase, but also the creation of prerequisite for the economic development and prosperity, with the adjustment to the new challenges. Since the beginning of the 21st century, two forces have appeared in the world landscape: technological progress and the phenomenon of globalization, which have led to a major impact both on each economic agent and on economies in general. The process of accession and integration into the European Union has generated solid prospects for all Member States with relevant implications for economic policy makers. All these “pieces” have accelerated the process of market expanding while maintaining competitiveness remains the main goal of an economy. Therefore, trade flows, competitiveness, free movement are some of the pillars that support economic development and prosperity, not so much in quantitative terms as in qualitative terms, through rational or irrational choices, for economic or non-economic reasons that consumers make.

The accession to the EU represented a new chapter in the Romanian history with a significant economic and social burden: the economic modernization and the improvement of quality of life. Growth and sustainable development meant “ensuring a sustainable growth rate, necessary and sufficient to reduce Romania's gaps to the EU average; increasing the quality of life, reducing poverty and improving health; maximizing the effects at a unit of resource consumption, in general, and integration costs, in particular, over the medium and long term horizon” (Zaman, 2007). In order to achieve these objectives, a series of structural and social changes were required, together with the unique construction, in which the economic borders are abolished, so that we can speak of a new economic space - dynamic integration (Drăgan, 2005), but components of the national economy follow its own course (static integration), doubled by the integration of policies.

In the document on the programming the Structural and Cohesion Funds, the vision at national level is to “create a competitive, dynamic and prosperous Romania” in order to reduce economic and social disparities with EU Member States (National Strategic Reference Framework 2007-2013). Therefore, one of the clear objectives of the EU is to achieve convergence, which is divided into several types: nominal, real and structural, depending on the different types of policies, respectively economic indicators. Real convergence aims to achieve a standard of living similar to other EU Member States - productivity convergence, a similar degree of openness to the economy. In the same context, structural convergence is discussed, which refers to the structure of the economy by sectors, which can influence the business cycles and long-term development processes (Klasova et al., 2015).

The article highlights the impact of free trade on economic development and prosperity both in the European Union and Romania, given that the expansion of trade in goods and industrial capacity has been the engine of prosperity. However, with the constraint of new rules as a member of the European construct and the evolution of technology, services have become the main area of interest for development, as production and employment (Uppenberg and Strauss, 2010).

In Romania, regarding the international trade, if the value of the imports registered an upward trend after 2007, in the case of exports there were fluctuations, but the two components of the trade balance recorded values much higher than those of the pre-accession period, which shows on the one hand the establishment of new commercial relations with European partners, and on the other hand a series of significant changes in the model of GDP/economic growth, the integration of national actors in European value chains (economic integration), and the way for formulating economic policies.

Free trade encourages the specialization of nations, which improves the efficiency and productivity of workers, leading to an increase in the standard of living of individuals. Trade

is not a zero-sum game, in which if one player loses the other wins. By specializing on a particular production line, then by exchanging goods and services people can substantially increase their standard of living, as productivity gains are naturally followed by an increase in the supply of goods and services, thus an increase in real incomes (Vuldzhev, 2016).

Free trade and prosperity

Collaborative production processes allow each producer to deal exclusively with the production of those goods and services that offer the greatest benefits from productivity. In this way, all economic agents can increase the number of their products and services available, thus contributing to material prosperity. The same principle applied to the cooperation between economies has the same effect on the participating countries. A high supply of goods and services, as well as a high level of material living conditions, ensures a high standard of living and ensures each individual an independent life and full involvement in society in the context of their own freedom (Petersen, 2016).

Free trade ensures both economic growth, through the value registered by GDP in the economy, but also economic prosperity, through non-quantifiable features. One of the key elements involved in the intensification of trade is the elimination of barriers to import of goods and services, which has as a purpose to protect domestic suppliers. Non-discriminatory restrictions protect consumers from harmful health products. In this case, the imports are not treated differently from the products offered on the domestic market, so it is not possible to speak of discriminatory behavior. Eliminating barriers means granting a certain degree of freedom, a necessary condition for prosperity.

A transparent market is also a precondition for the efficient functioning of markets and for a functional free trade system. Only when consumers have information about the advantages and disadvantages of a particular product they can make the decision that best meets their needs.

In addition, for the proper functioning of the markets it is important that all the economic agents involved have the same level of information about the quality of the products marketed. Inefficiency manifests as soon as information differences arise (privileged trading on the financial market or sale of a defective product). Therefore, a system of free functional exchange needs to eliminate information asymmetries.

International cooperation implies free trade that will improve the overall prosperity of the company if the producers and consumers bear all the costs related to international trade. Therefore, such a system requires assuming responsibilities and consequences for all decisions taken. The intensification of free trade produces a general increase in revenues. The distribution of these incomes among countries does not automatically increase the material prosperity of each country. There is another side to the problem: a higher supply of goods leads to lower prices on the global market for the product in question, and a sufficient decrease can lead to a drop-off in export revenues, despite the large volume, leading to a cut in the income of the exporting country and consequently to the decrease of the standard of living of the respective country, phenomenon known as “immiserizing growth”. This phenomenon occurs mainly in the less developed economies, which export only raw materials, but not products subject to further processing. In order to prevent such a process, all industrialized countries must open their markets to developing countries, without demanding the same in return.

An intensification of international trade increases the pressure of global competition. Companies must therefore constantly resort to the reduction of production costs, especially through technological innovations (with increasing productivity).

Therefore, these are some of the elements that fall within the scope of free trade, of trade flows, which contribute to economic growth and development, as well as to achieving a

degree of satisfaction in the choices of economic agents meant to ensure a higher level of quality of life and, implicitly, of prosperity.

Statistical data and results

The Organization for Economic Cooperation and Development uses the Foreign Direct Investment Restrictiveness Index indicator to highlight the ease that accompanies economic agents in carrying out their activities on a certain European market, but also the existence of possible discriminatory regulations regarding the economic agents in that state. From the analysis, it can be observed that the national regulations of the Member States are among the most open to foreign investments at a global level, and Romania is in the first places in terms of openness to foreign investments and non-discrimination of the regulatory framework as against foreign economic agents.

Another important coordinate that contributes to the structural adjustment processes is the increase of the services' contribution to the creation of GDP as well as to the expansion of trade and investment flows.

Romania's economy has grown at a rate close to the potential starting with 2014, when real GDP grew by 3%, reaching in 2016 an increase of almost 5%. At the same time, however, the pace of export growth has slowed due to deteriorating external demand, especially in emerging countries.

Regarding the structure of exports according to products, in 2017 the largest share of Romanian exports (14.19%) was ICT services, followed by accessories for motor vehicles. The transport services support with a weight of 7.36% the Romanian exports.

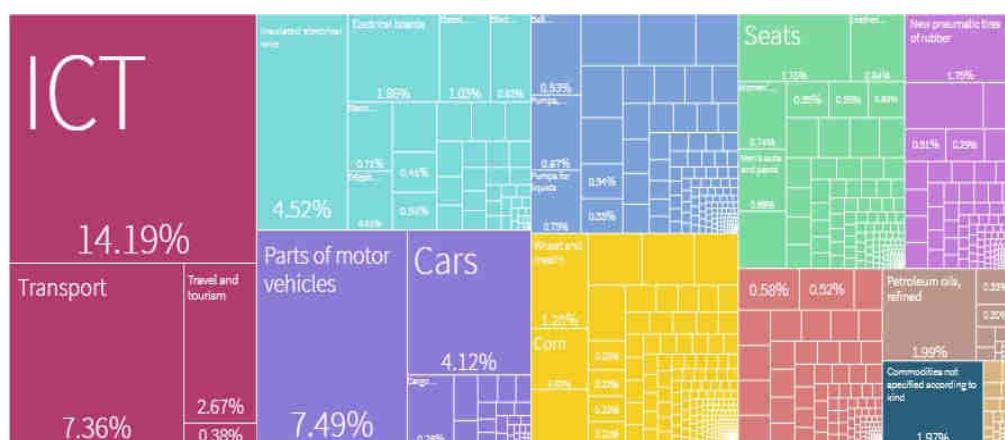


Fig. no. 1 Structure of Romanian exports in 2017 by product sectors

Source: *The Atlas of Economic Complexity, 2020, atlas.cid.harvard.edu*

If we consider the imports, we notice that their structure does not differ significantly from that of the exports, the main explanation of this similarity being that most of the production factors used in the manufacture of export goods are also imported. This also implies a low influence of the exchange rate impact on trade balance, the effect of changing the currency which would positively or negatively affect the export, compensating in large part with the effect on the import. In the case of imports, we observe a higher share of imports of tourism services compared to those of transport.

As regards trading partners, the main trade is with Germany, Italy, Hungary and France. Romania has as main markets Germany (28.76% of total exports), Italy (12.59%) and France (7.98%). Referring to imports, on the first two places are the same countries that represent sales market with 25.03% and 11.97%. The third place is occupied by Hungary, where imports account for 8.8%.



Fig. no. 2 Structure of Romanian imports in 2017 by product sectors

Source: *The Atlas of Economic Complexity, 2020, atlas.cid.harvard.edu*

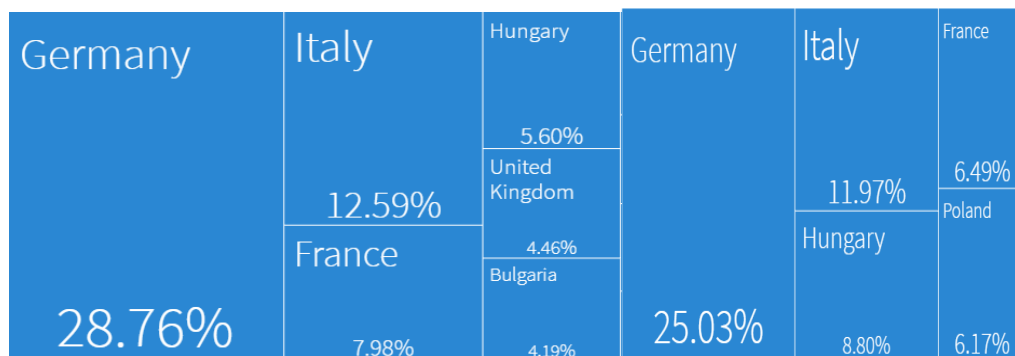


Fig. no. 3 Exports and imports partners of Romania in 2017

Source: *The Atlas of Economic Complexity, 2020, atlas.cid.harvard.edu*

Regarding the evolution of exports in terms of value, they increased until 2008. Starting with the outbreak the value of exports has fluctuated, reaching in 2019 their value to be over 52 billion euros.

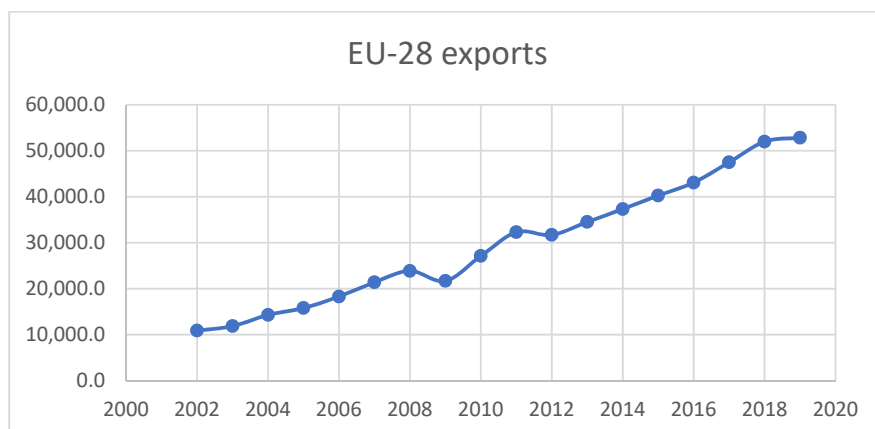


Fig. no. 4 Romanian exports between 2002-2019 in EU-28 (millions)

Source: Developed by the authors according to Eurostat, 2020,
<https://ec.europa.eu/eurostat/data/database>

Thus, an increase of both exports and imports is observed with Romania's accession to the European Union. Thus, the degree of openness of the economy has increased, with over 86% of GDP, but compared to the other countries in the region, Romania remains the country with the lowest degree of openness, below the average level of the European Union

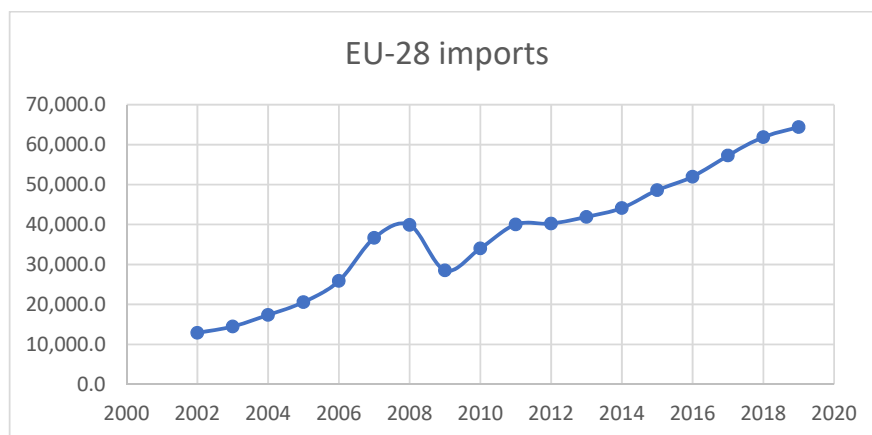


Fig. no. 5 Romanian imports between 2002-2019 in EU-28 (millions)

Source: Developed by the authors according to Eurostat, 2020,
<https://ec.europa.eu/eurostat/data/database>

The evolution of the value of imports is similar to that of exports, observing a considerable increase in the period 2000-2008, followed by fluctuations, reaching in 2019 just over 64 billion euros.

The accession of Romania in 2007 had beneficial effects from many points of view, which represented the main way of economic, social, political progress, but also the closeness of the most developed countries standards in the EU.

Conclusion

Free trade along with competitiveness is one of the essential factors of socio-economic development and prosperity, thus providing companies with the necessary incentives to become more and more productive.

An environment that supports trade will allow new products and ideas to be tested, financed, marketed and easily delivered to customers. The advantages of free trade are often explained in terms of the Ricardian comparative advantage and the improvement of consumer choices. Trade gives power to individuals and encourages competition. At the base of free trade is the possibility of consumers and companies to choose from products, services, ideas available both internally and internationally. At the same time trade gives free reins to the communication of new ideas and contributes to the increase of productivity.

Romania has significant opportunities in terms of commercial infrastructure development, considering the digital provision of public services to support the spread of ideas, but also the improvement of transport infrastructure through administrative capacity and leadership. (Legatum Institute, 2019).

True prosperity means more than economic success and material well-being, but a strong economy is needed to build sustainable prosperity. Romanian economy has undergone a difficult transition from communism to democracy, benefiting from a greater degree of economic openness with the accession to the European Union.

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HOW ATTRACTIVE CAN A JOB IN SALES BE? A BUSINESS STUDENTS' EVALUATION

**Diana-Maria Vrânceanu¹, Mirela Diaconescu², Mihai Diaconescu³
and Vlad Diaconescu⁴**

^{1) 3) 4)} *The Bucharest University of Economic Studies, Romania*

²⁾ *The Bucharest University of Economic Studies, CCREI, Romania*

E-mail: diana.vranceanu@mk.ase.ro; E-mail: mirela.diaconescu@rei.ase.ro; E-mail: mihai.diaconescu@mk.ase.ro; E-mail: vladd25sept@yahoo.com

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Abstract

This study examines how Romanian business students evaluate the attractiveness of a potential job in sales. To this end, a total of 167 students from five different faculties of the Bucharest Academy of Economic Sciences have been surveyed online, with the main purpose of identifying what they perceive as an attractive/unattractive potential job in the field of sales, as well as identifying what attributes the students associate to a potential job in the field of sales. The most attractive aspect of a job in sales has been found to be *the interaction with many people*, while the highest score for the unattractive attributes was associated to *the fact that you need to persuade people / negotiate with them*. However, negotiation is considered by almost half of the interviewees as an attractive attribute. When thinking about a job in the field of sales, students firstly evaluate the possibility of growing from a professional standpoint as well as the balance between personal and professional life, while the lowest item on their list was the “impressive” name of the job and the possibility to work separately from other colleagues. As to the most attractive fields of activity in sales, the students' options were first and foremost directed towards tourism and leisure (27.1%), IT industry (25.3%) and real estate (22.9%). Boys prefer outdoor activities in a larger proportion than girls (50% and 40% respectively) and are less inclined to seek a job that requires them to sell via telephone or in a store. The results of this study could help establish a profile of the business student who is interested in a career in sales.

Keywords

sales job, job attractiveness, sales fields, attitudes toward sales, student perception of sales career

JEL Classification

M10, L81, L84

Introduction

This research aims at understanding the business students' perception towards a job in sales. This issue is topical, as it appears from the literature review.

Talented employees are often viewed as one of the most important production factors that retailers have need of in order to remain competitive in sales environments that nowadays change so rapidly, so many retail companies have focused their efforts on recruiting graduates (Reda, 2008). A research subject that is carefully studied now has to do with the most important attributes of a job which students analyze in order to determine how appealing a certain potential job is when evaluating several job opportunities (Oh et al., 2016). Some authors (Broadbridge et al., 2009) have claimed that retail employers have not succeeded in selling their empty job positions to the public. The negative perception towards a career in retail can be determined by a poor communication between the retail industry and the potential candidates for vacant jobs (Broadbridge, 2003).

Sojka et al. (2000) have focused mainly on the perceptions of students from the business field, who have had the most contact with sales: marketing students, students who have done two or more sales courses and students who have had a connection to the field of sales through relatives or through a temporary job / internship in sales. The conclusion of the study is that these students have a significantly better perception towards a career in sales than other students. Bristow et al. (2006) opts for a similar strategy, finding that students who had done courses in sales were more likely to have a positive attitude towards choosing a career in sales. Suci et al. (2009) consider investment in language training and adopting a knowledge management approach can improve students' skills and competences, making them better prepared for the labor market.

While some authors have shown there is a relative lack of research with regards to education in sales (Cummins et al., 2013), others have shown that sales jobs nowadays require more technical and analytic abilities than ever (Davidson, 2013). The literature has also indicated that the level of professionalism required in sales is growing, as an increasing number of sales employees are more solution-oriented rather than sales-oriented (DeVecchio and Honeycutt, 2002; Ellis, 2000). Furthermore, the cost of training the employees and the cost of fluctuation are high; therefore, choosing the right candidate for the sales position is crucial (Adidam, 2006).

Donoho et al. (2012) show that there are gender differences in the way scenarios regarding sales ethics are evaluated, but Spillan et al. (2007) have found that there are no significant differences between the perceptions of men and those of women towards a career in sales, although men have indeed indicated they are more likely to pursue such a career. Sherwood et al. (2012) have shown that students in their early years and women have had more positive attitudes towards sales.

Other research has revealed that the perception towards sales as a profession may depend on six criteria. These include knowledge provided by specialized programs in universities, the autonomy of certification programs and their public credibility, the service brought to society, organizational culture, an ethic code and the importance of sales abilities (Hawes et al., 2004). A significant challenge in the recruiting process comes from competence-related industries that require the same skills that are practically becoming competing industries. Specifically, companies from other industries are simultaneously increasing their recruitment efforts, targeting the same talented students or graduates. Retailers should be aware of this competition on the market because students are worried first and foremost about their own career, without tracing clear delimitations between certain industries or categories of jobs (Rousseau and Arthur, 1999). It is therefore important for retailers to understand how these potential candidates evaluate the attractiveness of jobs and make the decision by analyzing industries. In this context, identifying the attractive and unattractive attributes of a sales job might become a key attribute in the human resources strategy that retailers formulate.

The subsequent parts of this paper are as follow: the research methodology section, results and discussions and conclusions and suggestions.

Research methodology

The purpose of this research is to understand the business students' perception towards a job in sales and to identify the attractive / unattractive attributes they associate to such a job. To this end, students from five faculties from the Bucharest Academy of Economic Sciences were interviewed: Business and Tourism; Marketing; The Faculty of Business Administration (in Foreign Languages) – FABIZ; The Faculty of International Business and Economics – REI; and The Faculty of Economic Cybernetics, Statistics and Informatics – CSIE.

The main objectives of this study are: (1) finding the attractive / unattractive attributes of a sales job and (2) identifying the aspects that students associate with a job in sales.

The research method used was the survey. Data collection was done online through a questionnaire using Google Forms (Google docs). The link hosting the questionnaire was distributed by e-mail, Facebook and WhatsApp to the students from the faculties mentioned above. The link was distributed on March 18, 2019, and responses were collected until March 31, 2019, when 167 valid responses were recorded. The profile of the respondents is shown in Table no. 1, using two socio-demographic values: the students' faculty and gender.

Table no. 1 The sample structure

Faculty	Gender		Total
	Boy	Girl	
Business and Tourism	9.70	28.48	38.18
CSIE	4.24	20.61	24.85
REI	1.21	12.12	13.33
Marketing	1.82	10.91	12.73
FABIZ	3.64	7.27	10.91
Total general	20.61	79.39	100

Source: Authors' own calculations

Of the total students who answered the questionnaire, 79.39% were girls and 20.61% boys.

Results and discussion

Regarding the attractiveness / non-attractiveness elements of a job in sales, the summary of the answers obtained is presented in Table no. 2.

Table no. 2 Aspects considered attractive for a job in sales

Attributes of a sales job	No. of choices	Percentage*
Interaction with many people	102	61,1
Chance of big financial gains	88	52,7
High chances of being promoted	71	42,5
The need to persuade/negotiate	70	41,9
Self-reliance for having better results	68	40,7
Material benefits (car, phone etc.)	62	37,1
Field work	29	17,4
Others. Which?	1	0,6

* out of the total number of respondents (167)

Source: Authors' own calculations

The most attractive aspect of a sales job is *the interaction with many people* (chosen by 61.1% of respondents), followed by *the chance of big financial gains* (chosen by 52.7% of students) and by *high chances of being promoted* (42.5%).

The most unattractive aspects in a sales job can be seen in Table no. 3.

Table no. 3 Unattractive aspects of a sales job

Attributes of a sales job	No. of choices	Percentage*
The need to persuade/negotiate	75	44,9
Field work	74	44,3
Small chances of big financial gains	45	26,9
Interaction with many people	33	19,8
Self-reliance for having better results	31	18,6
Material benefits (car, phone etc.)	4	2,4
Lower chances of being promoted	3	1,8
Others. Which?	2	1,2

* out of the total number of respondents (167)

Source: Authors' own calculations

As a general observation, the percentages of the negative attributes are lower than those of the attractive attributes. The first three unattractive aspects of a sales job are: *The fact that you have to convince / negotiate* (44.9%), *Fieldwork* (44.3%) and *Small possibilities for financial gain* (26.9%). What's interesting is that the same attribute, *the need to persuade / negotiate*, is considered by almost half of the respondents as being an attractive attribute, while the others see it as an unattractive attribute of a sales job. Also, 52.7% of students think they would have high chances of big financial gains, while 27% think the exact opposite.

To gain a deeper understanding of how attractive a sales job is for students, it is useful to know the expectations they have from a hypothetical ideal job and to compare them with the possibility that they see these expectations to be fulfilled in reality. For this purpose, the semantic differential scale with 5 values was used (1 = Not Important; 5 = Very Important). The result of this comparison can be seen in Table 4, based on the average.

Table no. 4 Students' expectations of the ideal workplace and one in sales

Workplace expectations	Expectations of the ideal workplace		Projections on a real job in sales		t test
	Mean	Median	Mean	Median	
Job stability	4,10	4	3,04	3	6.73*
The possibility to grow professionally	4,41	5	3,24	3	5.58*
Be appreciated for what I'm doing	4,09	4	3,41	3	5.04*
Be able to influence my salary	4,01	4	3,69	3	2.91*
Help others	3,88	4	3,50	3	3.74*
Have control over my working schedule	3,90	4	3,08	3	5.22*
Have a big salary	4,30	4	3,41	3	5.74*
Do a job that helps people	3,94	4	3,38	3	4.02*
Work independently from others	3,26	3	3,20	3	1.16
Have a good relationship with my colleagues	4,16	4	3,48	3	4.84*
Work in a team	3,59	4	3,34	3	5.27*
Work with new technologies	3,86	4	3,47	3	4.74*
Have a higher status (prestige)	3,71	4	3,04	3	4.27*
The job has an impressive name	2,48	2	2,63	3	-7.45*

To give me clear opportunities for promotion	4,01	4	3,28	3	5.63*
To ensure a work-life balance	4,40	5	3,24	3	11.41*

*p<0.05

Source: Authors' own calculations

Students appreciate first and foremost the opportunity to develop professionally and the balance between personal and professional life, but there are many other attributes that most students have appreciated as important. Regarding the projections that students make about a job in sales, to all the attributes analyzed the most frequent answer was *neither important nor unimportant*, and the averages are significantly lower than when referring to the ideal job. This fact may show -from the point of view of the mean- that students perceive that a job in sales cannot properly meet their expectations from a job, but also that students do not know the content of a job in sales (fact suggested by the median, since most of the opinions expressed are neutral). There exist significant differences between the two types of expectations as t-test values show (Table no. 4), except for work independently from others. Thus, students consider working independently from others is a condition stated for an ideal job which is very likely to be accomplished also on a real job in sales.

In order to identify the connections students make when thinking about a sales job we again used the 5-value Likert scale (1 = Strongly disagree; 5 = Strongly agree). Table no. 5 summarizes the students' responses based on the mean.

Table no. 5 Aspects with which students associate a job in sales

Elements of association	Mean	Median
It's for frustrated people	1,27	1
It's an uninteresting, boring job	1,63	1
It's a job that's easy to get	2,51	2
It's for people who only think about money	2,01	2
Those who work in sales press people to buy products they don't need	2,74	3
People working in sales are dishonest and want to cheat customers	2,14	2
It's just a job, you can't make a career	2,03	2
It involves a lot of traveling	2,79	3
It's a low security job	2,64	3
You work too hard compared to how much money you make	2,40	2
It interferes with your personal life	2,42	2
It's difficult to be promoted into a management position	2,72	3

Source: Authors' own calculations

It can be concluded that respondents are generally convinced that a sales job is not for frustrated people and is not uninteresting or boring. In relation to other association suggestions, both the mean and median suggest either a rather negative association or a faint opinion about a job in sales.

If they were working in sales, for 38% of the students it would not matter if they held a job in direct sales to individuals and sales to companies. About the same percentage is registered for preferences directed to a position in sales to companies. Direct sales to individuals, as a first option, registered a percentage of 7%, and 17% of students did not have an opinion (Table no. 6).

Table no. 6 The type of sales position considered attractive (%)

Type of position	Total
Sales to companies	37.72
Direct sales to individuals	7.19
Both, to the same extent	38.32
I can't appreciate it	16.77
Total	100

Source: Authors' own calculations

With regard to the areas of activity considered most attractive for a job in sales, the students' options were directed primarily to: tourism and leisure (27.1%), IT industry (25.3%) and real estate (22.9%). The first two choices are most likely justified by the fact that most of the respondents come from those two faculties. An important conclusion could be that these two faculties, Business and Tourism and CSIE have well-defined profiles and students get to know the field for which they study and to evaluate it as attractive. A distribution by faculties and fields of the obtained answers can be found in Table no. 7.

Table no. 7 Distribution of answers on attractive business sectors, by faculties (%)

Sectors perceived as attractive for a career in sales	Faculty					
	Business and Tourism	CSIE	FABIZ	Marketing	REI	Total
Insurance, financial and banking products	4.76	2.44	11.11	0.00	13.64	5.45
Constructions, construction machinery	1.59	0.00	0.00	0.00	0.00	0.61
FMCG (fast moving consumer goods, i.e. consumer goods, with high turnover and relatively low prices; e.g. detergents, cosmetics, basic foods, sweets, etc.)	9.52	0.00	5.56	4.76	4.55	5.45
Food industry, alcoholic beverages, tobacco	3.17	0.00	0.00	9.52	0.00	2.42
IT industry (hardware and software systems etc.)	14.29	58.54	5.56	23.81	18.18	26.06
Medical and pharmaceutical (medical equipment and devices, medical services, medicines etc.)	3.17	7.32	5.56	9.52	27.27	8.48
Real estate (lands, housing etc.)	17.46	24.39	44.44	33.33	9.09	23.03
Telecommunication	3.17	0.00	0.00	0.00	0.00	1.21
Tourism and leisure	42.86	7.32	27.78	19.05	27.27	27.27
Total	100	100	100	100	100	100

Source: Authors' own calculations

As shown in the table, students from the Faculty of Business and Tourism choose the tourism field in a proportion of about 43%, and those from CSIE choose their own IT domain, in a

proportion of 58.54%. Real estate is the first choice of students from FABIZ and Marketing, and those from REI pay equal attention to the medical field and tourism.

A final aspect analyzed is that of the preference regarding the place of activity, indoor or outdoor. There is some difference between boys and girls from this point of view, as shown in Figure no. 1.

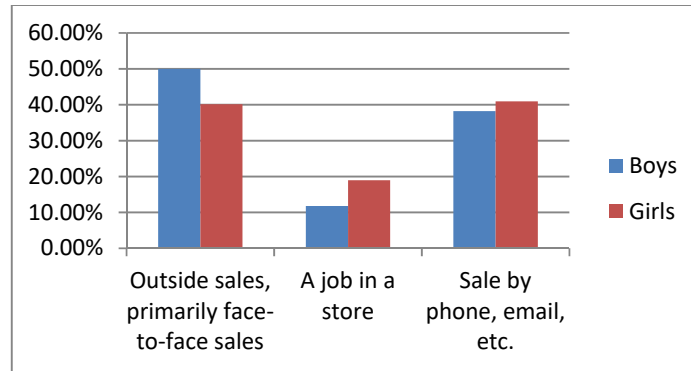


Fig. no. 1 Preferences for indoor/outdoor activities

Source: Authors' own calculations

Boys prefer outdoor activities to a greater extent than girls (50% and 40% respectively) and less selling by phone (38% versus 41%) or a job in the store (11.76% compared to 18.94%). However, chi-square test $\chi^2(2)=1.47$, $p>0.05$ shows that the differences between girls and boys regarding the preferences for indoor/outdoor activities are not statistical significant.

Conclusions and suggestions

This study has investigated the perception students from five different faculties of the Bucharest Academy of Economic Studies have towards a sales job.

With regards to the attractive/unattractive attributes of a job in the field of sales, the most appealing aspect for students is the interaction with a lot of people. The need to persuade / negotiate is also high on the students' preferences, but for a significant other part of students it represents an unattractive feature. In the same way, the chances for big financial gains are perceived by some as high and by others as low. These findings, along with the others shown in the study, could be used to design attractive offers of employment and to present the field of activity and the companies in a way that might remove prejudice from the minds of students and youth in general.

Boys are more interested than girls in a sales position and prefer outdoor activities, while most of the girls interested in such a job prefer indoor activities.

The results of this study could help create a profile of the business student who is interested in a career in sales. This profile could be important in identifying successful salespeople while they are still in our universities, allowing teachers to properly prepare them for such a career. In addition, recruiters should first of all seek out students who have already taken courses or internships in sales as they tend to have a significantly more favorable perception of the attractiveness of a sales position than the rest of the students. A step further would be the development of strong partnerships between universities and the business environment, from which all the involved factors would have to win, in the foreground being the students.

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A NEUROSCIENTIFIC APPROACH ON THE IMPACT OF INFORMATION OVERLOAD ON CONSUMERS' ATTENTION

Corina Pelău¹, Ruxandra Bădescu² and Cristian Negruțiu³

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

E-mail: corina.pelau@fabiz.ase.ro; E-mail: ruxbadescu@gmail.com;

E-mail: cristian_negrutiu@yahoo.com

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Abstract

Information overload represents one of the biggest problems of our times, as consumers are constantly exposed to different types of information from commercial and non-commercial sources. Especially in the advertising industry, the overload of commercial information determines the consumer to pay less attention to the advertised brands and products and reduce by this their effect on consumers. Therefore it is important to optimize the amount of information which individuals and consumer receive in order to increase its efficiency. In this paper there are presented the results of an eye-tracking experiment about the unconscious reactions of consumers towards information overload in advertising. There has been measured the view of the participants towards an advertising in an overload condition, containing a bigger number of objects in comparison to a reduced info condition of an advertising with a smaller number of objects. The results have shown that the consumer have watched the objects in the reduced info condition for a longer time than in the overload condition. Besides there was a smaller dispersion of attention in the reduced info condition, showing that the consumers have focused more on the main message of the advertising.

Keywords

Information overload, consumer behaviour, decision making, brands, eye-tracking tool

JEL Classification

M10, M31

Introduction

Information has been and continues to be a powerful resource for companies and individuals in the 21st century. Individuals and organizations are faced daily with dozens of information, which are perceived in a conscious or unconscious way. From a marketing perspective, the advertising industry is one on the first domains to invade consumers with information and messages about products and brands. In almost any field of the everyday life consumers get in contact with several marketing information, which they perceive more or less in a voluntary

way. From television programs, where advertising is broadcasted every half an hour to magazines which provide pictures or articles about the advantages or disadvantages of brands, to the social life, where each individuals wears branded products, the consumer is in contact with marketing information (Pieters et al., 2007). Moreover, the present development of internet and mobile connectivity increase even more the contact of consumers with information from their virtual world. Each consumer or individual receives daily or even hourly a huge amount of messages, posts, notifications and other types of information from his social networks or other associated sites. All these information affect the emotions and decisions as well as the cognitive ability of each individual. In this sense it is interesting to ask how much information is too much. There are several question which have to be asked in this information overloaded society. First of all is it really efficient for individuals and organizations to receive so much information and do they really have the ability to process all the received information. In order to deal with the huge amount of information, the concept of information overload has been developed, which aims to define the situation in which too much information becomes inefficient (Pentina and Tarafdar, 2014). In this paper we analyze from a neuroscientific point of view the effect of information overload on the attention of consumers. In the theoretical part of the paper, there are presented the main problems related to the phenomenon of information overload, with focus on the advertising industry. There are also presented different aspects related to the neuroscientific methods of analyzing consumer reactions. With the help of an eye-tracking experiment, we aim to measure the impact of the number of objects in an advertising on the attention of the consumers. There are presented the eye-tracking results for two advertisings, one having a small number of objects and one having a bigger number of objects (overload condition). The results of the total viewing times and of the entry times, show that for the advertising with a smaller number of objects, the consumer focuses more on the main message.

Literature Review

The large number of product features or alternatives offered by companies represent an information overload for the potential customer (Krishen et al., 2011). The individuals do not have an unlimited capacity for processing the information and this is suggested by the concept of information overload (Pentina and Tarafdar, 2014). Both theoretical and practical approaches of the information overload concept represent relatively new topics for researchers in the neuromarketing field in terms of the ethics of the activity and the application of it in the economy.

Information overload occurs when the amount of data entered into a system exceeds its ability to process it (Milord and Perry, 1977). According to Pieters et al. (2007) too much information can overwhelm the advertising message and lead to information overload for consumers. A person as a consumer or employee of a company, being overwhelmed by the large volume of information, could lose sight of the essential issues that might interest him and in this way could make distorted decisions, based only on emotional impulses. In spite of the fact that large amounts of information are distributed and processed, it does not necessarily mean that their beneficiaries are better informed. On the contrary, the excessive collection of information determines the occurrence of the information overload phenomenon both at the individual and organizational level according to CECCAR Business Magazine (2016) and it will lead to a reduction in decision-making quality. The concept of information overload was first proposed by Bertram Gross in 1964 (Gross, 1964) and it is more actual then ever in a society dominated by intelligent devices who process information in a more rapid and efficient way (Pelau and Ene, 2018).

Information overload has negative effects on both the attention of the consumer but also on the neurological functioning of the human body. It has negative effects on the human body, by increasing the cortisol level, that can increase and the stress level in the organism. In this

way, the brain can be overstimulated and can produce moments of fog in thoughts and actions. Besides, the ability to do multitasking comes in detriment of cognitive performance (Levitin, 2015). When individuals are exposed to information which are beyond their capacity to understand, accommodate and process, the information overload phenomenon appears (Farhoomand and Drury, 2002). Apparently even the phenomenon of fake news has appeared and has been developed as a consequence of the inability of individuals and consumers to process big amount of data (Lee et al., 2017; Tantau et al., 2018).

The information overload does not have a positive impact on the companies either, because combined with the excessive bureaucracy and other factors, it reaches a misalignment with the business objectives and thus contributes to mistakes in the decision-making process. Various international studies conducted among managers show that information overload (including big data) represents the main cause of poor quality decisions. One of the biggest issue of information overload is that it may cause disruption of attention. Companies must take into consideration the phenomenon of information overload both in relation to their employees and in the relationship with stakeholders. Employees need clear rules, procedures, measures to avoid as much as possible and to combat the information overload (Lefter and Dragolici, 2018).

Neuroscientific approaches are an important way to measure the reactions of consumers to different stimuli and therefore they are also important in the measurement of the consumers' reaction to information overload. A better understanding of the unconscious states can be now provided by neuroscientific research and the tools used. Lim (2018) is of the opinion that the application of neuroscience tools by which the reactions of the subjects and implicitly of the consumers can be measured will bring significant progress in the theory and practice of business development and administration. Many types of human reactions can be measured with modern techniques such as: the electroencephalogram, the magneto encephalogram, the resonance imaging functional magnetic, the eye-tracking too and galvanic response. In the past the reactions have been difficult to measure with the classical research instruments (Pop, et al., 2013). The goal is to examine the consumer reactions and emotions by combining the research methods of consumer behavior with medical tools (Daugherty and Hoffman, 2017). Eye tracking devices are a good method to measure the unconscious reactions and the attention of consumers to different stimuli. Eye-tracking is a revolutionary technology that follows the view of the consumers when they look at an image displayed on the screen. The instrument records every unconscious movement, it measures the exact times in which a certain point was fixed, including the number of revisions, the dilation of the pupils, but also the movements of the subjects. The various stimuli carefully selected generate unconscious reactions, which will then be analyzed based on key performance indicators. At the same time, the purpose of this tool is to determine which stimuli activate the attention of the subjects and which are consciously or unconsciously ignored (Rosca, 2017). From a neuroscientific point of view, this field of measurement of consumer reactions is a topic of interest both for researchers in the field of consumer behavior at international level and for companies, as well as for the end user (Dragolea and Cofîrlea, 2011).

Methodology

The objective of our research has been to determine the unconscious reactions of consumers to visual object overload in advertising. Starting from the hypothesis that a high number (overload) of objects or information in an advertising will distract the attention of the consumers from its main message. A high number of objects or too many information will determine the consumer to analyze all these information to the detriment of the logo or the main message communicated in the ad. In order to test our hypothesis, we have compared the unconscious reactions of consumers towards two advertisings, with the help of an eye tracking device. Among other images the consumers had to watch for 10 seconds two tourism

advertisings with different number of objects. The first advertising (overload condition) contains three different images of an exotic destination, a text with the main message, the logo of the offering company and another text box with different information about the location (a total of 6 objects). The second advertising (reduced info condition) contains only three objects, namely the text with the main message, a picture of the destination and the logo of the offering company. Both advertising have targeted exotic destinations, being dominated from a visual point of view by a sky-blue color and exotic elements. Both offering companies are local brands and have a under average familiarity.

The eye-tracking experiment has been carried out on a number of 20 participants, with ages between 20-25 years. For testing our hypothesis, we have compared with the help of the discriminant analysis in SPSS 20.0 the total viewing time (dwell time in ms) and the entry times (the moment of the first watch in ms) for the two advertisings (overload condition with 6 objects and reduced info condition with three objects). The results are presented in the following section of the article.

Results and discussion

The discriminant analysis of the total times resulted from the eye-tracking experiment show that the consumer watches for a longer time the objects of the advertising in the reduced info condition in comparison to the overload condition, as it can be observed in table no. 1. Significant results can be observed for the comparison of the total viewing times of the text with the main message of the advertising ($F=41.7$, $p=0.000$), for the comparison between picture 2 in the overload condition with the single picture in the reduced info condition ($F=15.7$, $p=0.000$) and the logos of the two advertisings ($F=5.2$, $p=0.027$). The main message of the advertising in the reduced condition has been watched for an average time of $M=5599.4$ ms ($SD=1563.1$), which represents more than twice of the time in which the text message has been watched in the overload condition ($M=2168.1$ ms, $SD=1787.1$). The single picture of the reduced info condition has been watched for a longer time ($M=2344.8$ ms, $SD=1206.6$) in comparison to any of the three pictures in the overload condition ($M_1=1886.4$ ms, $M_2=1024.9$ and $M_3=1669.8$). The logo of the two advertisings has the shortest viewing time for both conditions. The logo of the reduced info condition ($M=823.2$, $SD=624.3$) has been watched for a longer time in comparison to both the logo ($M=438.2$, $SD=415.0$) and the description ($M=664.9$, $SD=1288.1$) provided in the advertising in the overload condition. Moreover only 17/22 consumers have watched the logo in the overload condition in comparison to the 20/22 consumers who have watched it in the reduced info condition. The description of the touristic destination in the overload condition has been watched only by half of the participants (11/22) showing that it did not catch their attention.

Table no. 1 Overload vs. reduced information condition of eye tracking results based on total viewing time of objects

Object in advertising	Mean total time (ms) in overload condition	Mean total time (ms) in reduced info condition	SD total time (ms) in overload condition	SD total time (ms) in reduced info condition	F	p
Message Text	2168.1	5599.4	1787.1	1563.1	41.7	.000
Picture 1 vs single picture	1886.4	2344.8	1293.2	1206.6	1.3	.254
Picture 2 vs single picture	1024.9		873.5		15.7	.000
Picture 3 vs. single picture	1669.8		1344.7		2.7	.103
Logo vs Logo	438.2	823.2	415.0	624.3	5.2	.027
Description vs Logo	664.9		1288.1		.245	.624

Source: Own research results

Regarding the entry times (the moment when the consumer has first watched an object in an advertising), the significant differences between the entry times for the two conditions, have been for the message text ($F=181.7$, $p=0.025$), the comparison between picture 1 ($F=5.661$, $p=0.022$) and picture 2 ($F=4.183$, $p=0.048$) in the overload condition and the single picture in the reduced info condition (table no. 2). It can be observed that the message text has been the most attractive one, by having an entry time at 304.1 (SD=966.5) ms for the reduced info condition and 817.1 (181.7) in the overload condition. From the standard deviation values, it can be also observed that the dispersion of reactions is lower for the reduced info condition, proving its attractiveness. Picture 1 (entry time 720.5) and picture 3 (entry time 1797.5) in the overload condition have been watched sooner but for a shorter time than the single picture (entry time 2195.5) in the reduced info condition. The logo and the description text have been watched last, but it had a higher dispersion of views for the overload condition ($M_{\text{logo}}=4468.8$, $SD_{\text{logo}}=3601.6$) in comparison to the reduced info condition ($M_{\text{logo}}=4236.1$, $SD_{\text{logo}}=1915.2$)

Table no. 2 Overload vs. reduced information condition of eye tracking results based on entry times of viewing the objects

Object in advertising	Mean entry time (ms) in overload condition	Mean entry time (ms) in reduced info condition	SD entry time (ms) in overload condition	SD entry time (ms) in reduced info condition	F	p
Message Text	817.1	304.1	966.5	181.7	5.443	.025
Picture 1 vs single picture	720.5		1510.8		5.661	.022
Picture 2 vs single picture	3692.0	2195.5	2302.9	2324.7	4.183	.048
Picture 3 vs. single picture	1797.5		1490.2		.415	.523
Logo vs Logo	4468.8	4236.1	3601.6	1915.2	.065	.800
Description vs Logo	3110.6		3550.6		1.557	.220

Source: Own research results

The results of our eye tracking experiment show that an advertising with a lower number of objects gives the viewer the possibility to focus more on the objects of the advertising, by watching them more attentively for a longer time. The lower standard deviation value show a unitary tendency of focusing on the main message of the ad. On the other hand, an advertising with a high number of objects has the capacity provides theoretically more information about the advertised product or destination (in this case), but because of the dispersion of the attention of the viewer, his/her capacity to focus or to memorize the main message is lower. We have also observed, situations in which the user has focused on certain details of the advertising and not on the main message or advertised product (Nistoreanu et al. 2019).

Conclusions

The results of our research confirm the fact that information overload has a negative effect on the attention of the consumers by reducing their focus on the main message of the advertising. The analysis of the views of the consumer show that in an overload condition the consumers have the tendency to watch all displayed objects, having less time to focus on the main message of the advertising. On the other hand, in the reduced info condition the participants have watched the reduced number of objects for a longer time and have focused more on these by having lower standard deviations for it. This results suggest that advertisings should be created with a smaller number of objects and details, in order not to distract the attention of

the viewer. Advertisings should have an attraction element, but it should not distract the attention of the viewer from the main message and the advertised brand.

This results can be also extended to other fields as for instance news posted on the internet or on other social media. Too much information provided to a consumer doesn't necessarily lead to a better informed individual, but on the contrary to a more confused one. Receiving too much information will determine the consumer not to pay attention anymore to the received information and therefore it will not have an effect on his decisions or feelings. The same happens in advertising, where too much information and promotion of a brand will rather distract the attention of the consumer than to inform him about the advertised product.

An important challenge of the advertising industry (and not only of the advertising companies) is to determine the right amount of information sent to its consumers in order to attract their attention and make them focus on the brand.

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CONSUMER'S PERCEPTION TOWARDS THE CHARACTERISTICS OF ARTIFICIAL INTELLIGENCE

Irina Ene¹ and Irina Bojescu²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*
E-mail: irina3enc@yahoo.com; E-mail: irina0927@yahoo.com

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Abstract

In the present world consumers are more and more surrounded by intelligent devices, which improve their quality of life by being more efficient, quicker and by processing a big amount of data. In the same time, these intelligent devices collect information about the consumer and influence their decisions by intervening in their everyday life decisions. The purpose of this paper is to define the term "artificial intelligence" and to analyse the people's reaction and behavior towards it. In the theoretical part, there are also presented different ways in which artificial intelligence can interfere in the life of consumers, companies and the relations between them. It describes the way artificial intelligence interferes in the entire ecosystem of the company and how marketing specialists use artificial intelligence in order to satisfy their customer and meet their expectations. In the empirical part, there are presented the results of a research regarding the characteristics of artificial intelligence and the perception of consumers towards these characteristics depending on gender and age.

Keywords

Artificial intelligence, consumer, efficiency, quality of life, self-fulfilment

JEL Classification

M10, M31

Introduction

The Internet has exploded in recent years with articles about artificial intelligence and its definitions, making it very difficult to include in one definition what artificial intelligence really means. According to Laurière (1987), artificial intelligence is a relatively new science, being for the first time mentioned approximatively 30 years ago. Its mission is to reconstruct, using artificial means, intelligent actions and reasoning. According to Heudin (2019), the notion of artificial intelligence was the first time mentioned around the '50s by the mathematician Alan Turing (1950), who has raised for the first time the problem of bringing machines a new form of intelligence. He describes a test known today as a "Turing Test" in

which a subject interacts blindly with a human being, then, with a machine programmed to formulate sensitive answers. The test wants to prove that the subject is not able to differentiate between the machine and the human being, then, it can be considered as “intelligent”. Artificial intelligence refers to the implementation of a number of techniques that allow machines to mimic a form of real intelligence. (Heudin, 2019). In the first part of the paper, an overview is given on the development of artificial intelligence and its impact on the relation to consumers. In the empirical part of the paper we will analyze the way in which artificial intelligence influences every day our choices, our behavior and surely, our decisions, because in our opinion artificial intelligence is equal with a decision maker. There are presented the results of a research about the different challenges of artificial intelligence in the everyday life of the consumers.

Literature Review

The implementation degree of artificial intelligence is increasingly found in numerous fields of application which makes us wonder how people and consumers react to it. Every day individuals and consumer make decisions, from situations in which they go shopping or choose a restaurant where to eat. Social media or the latest apps in a specific domain influence these decisions of consumers, which makes us wonder which the influences of these artificial devices on consumers is. Artificial intelligence help companies to influence the customer's behaviors, by making them loyal to a certain product or brand without the clients' conscience. In recent years, online shopping has increased as a result of advertising messages that appears on social media. This fact has determined marketing specialists to exploit this area and analyze the consumers' behaviors and preferences allowing them to anticipate their choices and to have an overview of these. In this way, companies will be able to understand and to know what their customers' expectations are. They will be able to create personalized offers in order to attract consumers to buy their products, by aiming to keep them loyal to their brand and to satisfy their needs (Pelau et al. 2019). The companies should know that a client who was satisfied by the quality of their products or services, by the kindness or the promptitude of their staff for the first time, will surely choose for the second time their services. For this reason it is very important to be close to your clients and to ask feedbacks, to offer discounts or different advantages. (Bertacchini et al., 2017).

The biggest advantage of artificial intelligence is the fact that it can collect and interpret a large amount of information that the human brain cannot do. By this companies can make the best decisions in order to satisfy their customers and to optimize its activities for growth and profitability. (Loison & Cisse, 2019). To anticipate consumers' behavior using machine learning algorithms, it is necessary to have a close collaboration between specialists in the field, scientists and IT in order to valorize the data and to put them in practice. There is a need for decisional assistance tools regarding the information of the consumers that can be made with data science and experts in the field but also with the help of APIs (application programming interfaces) (Loison & Cisse, 2019). The data to be analyzed and distributed refers to internal data about customers or potential customers and their behavior as well as the multiple interactions in its ecosystem, open data from social networks or other external data (Loison & Cisse, 2019).

The main purpose of each company is to differentiate itself from its main competitors and to become a market leader. Consumer behavior, technology and the regulations in force are constantly changing, so in front of them, artificial intelligence and machine learning are absolutely necessary for companies because they provide real tools for adapting to continuously changing world. Artificial intelligence brings certain solutions to many problems that can occur throughout the entire ecosystem of the company but also in the analysis of consumers as potential customers of the company.

According to Siecle Digital (2018), nowadays consumers create 2,5 Exa-Octets data per day. The data's multiplication possibilities creates an overwhelming amount of information. Companies have to face to this abundance of data which is pouring out on the digital media that is daily used. In addition to this, data creation is exponential and which also increases the amount of data that needs to be analyzed. From the perspective of artificial intelligence this is a strength because it has the capacity to sort the information and to adapt to this dizzying increase in data. Artificial intelligence has the advantage that it can filter the data and it makes it easy for consumers to search for different information. Let's imagine how it would be if we were looking at a map trying to go from point A to point B, crazy, isn't it? Artificial intelligence is here to ease our live because it makes it possible to retrieve, compile and format the data received. Another example is the movie database Netflix. Netflix has thousands of video content from series, movies to documentaries etc. If one compares his/her Netflix account to that of your friend, it can be observed that they have different content because Netflix uses different movies or series covers depending on your ratings. This is possible thanks to the artificial intelligence which not only suggests you a list of series or movies to look at, but influences you with a selected titles in relation to your personal preferences. In this way, our ability to make decisions about the films we watch is facilitated but in the same time controlled by the artificial intelligence behind Netflix (Ludovic, 2018).

Methodology

The objective of our research is to determine the perception of the consumers regarding the factors that affect the acceptance of artificial intelligence and robots. The survey has been carried out on a number of 370 respondents, who had to evaluate situations involving individuals/consumers and robots. The survey has been carried out in the December 2019 and the respondents have been chosen randomly. They had to evaluate the questions on a Likert scale from 1 to 7 (where 7 represents totally agree and 1 represents totally disagree).

The questions have been grouped in seven categories based on the main factor which influences the acceptance of robots and their contribution to the consumers' everyday activities. These categories are: efficiency, increase in quality of life, hedonic pleasure, social pressure, learning processes, willingness to buy, self-fulfillment. Table no. 1 offers an overview on the questions and the results received. The significant differences between the respondents' choices have been tested depending on two demographic characteristics of the consumer: gender (female and male consumers) and age (people younger than 30 years and people older than 30 years).

Results and discussion

The first category contains four questions regarding the *efficiency* resulted from the interaction with artificial intelligence. When asked if the robot would perform daily activities more efficiently, the majority of women agreed more with this question as men, while the people over 30 also rated this question higher as the one younger than 30 ($M_{1a \text{ total}} = 4.68$, $M_{1a \text{ women}} = 4.69$, $M_{1a \text{ men}} = 4.66$, $M_{1a <30} = 4.64$, $M_{1a >30} = 4.75$). The accuracy which a robot can achieve in comparison to a human was rated also higher by women and by people over 30 years old, while men and younger people offered a slightly lower rate for this ($M_{1b \text{ total}} = 4.72$, $M_{1b \text{ women}} = 4.80$, $M_{1b \text{ men}} = 4.64$, $M_{1b <30} = 4.64$, $M_{1b >30} = 4.86$). The third question was related to the fact that less errors occur when the duties are fulfilled by robots. There is however no significant difference based on gender, while age is making just a tiny difference, as people older than 30 agree slightly more with this concept than the ones younger than 30 ($M_{1c \text{ total}} = 4.79$, $M_{1c \text{ women}} = 4.78$, $M_{1c \text{ men}} = 4.79$, $M_{1c <30} = 4.70$, $M_{1c >30} = 4.94$). We can however notice that the efficiency was strongly correlated with speed, as the total mean was the highest for this final question in comparison to the other three questions from this category ($M_{1a \text{ total}} = 4.68$, $M_{1b \text{ total}} = 4.72$, $M_{1c \text{ total}} = 4.79$, $M_{1d \text{ total}} = 5.06$). Women agreed more than

men with this fourth question which stated that a robot could fulfill daily activities faster than a human ($M_{1d \text{ total}} = 5.06$, $M_{1d \text{ women}} = 5.20$, $M_{1d \text{ men}} = 4.92$, $M_{1d <30} = 5.02$, $M_{1d >30} = 5.15$). The second factor which has been analyzed in order to see if it affects the acceptance of artificial intelligence was the **increase in quality of life**. For this second category, we observed that the total means of the three questions are the highest in comparison to the ones from all the other six categories, which shows that the increase in quality of life is particularly high rated as an important influencer in the acceptance of artificial intelligence in our life. The first question was referring to the fact that activities completed by robots are making our life easier and in this regard, men offered a higher rate to this statement than women, same as people over 30, in comparison with people younger than 30 ($M_{2a \text{ total}} = 5.23$, $M_{2a \text{ women}} = 5.20$, $M_{2a \text{ men}} = 5.26$, $M_{2a <30} = 5.21$, $M_{2a >30} = 5.27$). The second statement checked to the possibility of having more free time thanks to the use of a robot. While the total mean was particularly high, there seem to be no big differences between the answers based on gender or age ($M_{2b \text{ total}} = 5.36$, $M_{2b \text{ women}} = 5.37$, $M_{2b \text{ men}} = 5.35$, $M_{2b <30} = 5.36$, $M_{2b >30} = 5.36$). The last question stated that people can concentrate on more complex activities, if the robot is helping out with some of the duties. In this situation, we have slightly higher rates given again by men, in comparison to women and by older people, in comparison to younger generations ($M_{2c \text{ total}} = 5.34$, $M_{2c \text{ women}} = 5.28$, $M_{2c \text{ men}} = 5.39$, $M_{2c <30} = 5.27$, $M_{2c >30} = 5.45$).

Table no. 1 Factors that affect the acceptance of artificial intelligence

Item	Total mean	Mean Women	Mean Men	Mean Age < 30 years	Mean Age > 30 years
1. Efficiency					
a. The robot performs the activities more efficiently	4.67	4.69	4.65	4.63	4.74
b. The robot completes the duties more accurately	4.71	4.79	4.63	4.64	4.86
c. Less errors occur when duties are fulfilled by robots	4.78	4.78	4.78	4.70	4.93
d. The robot fulfills the activities faster	5.06	5.20	4.92	5.01	5.15
2. Increase in quality of life					
a. Activities completed by the robot are making my life easier	5.23	5.20	5.26	5.21	5.26
b. I have more free time thanks to the robot	5.36	5.37	5.35	5.36	5.35
c. I can concentrate on more complex activities, if the robot is helping me out with some of the duties	5.33	5.28	5.38	5.27	5.44
3. Hedonic pleasure					
a. The interaction with the robot is fun	4.63	4.61	4.65	4.55	4.78
b. The interaction with the robot is fascinating due to the novelty degree it brings with	4.85	4.91	4.79	4.77	4.99
c. I feel like I am part of a science-fiction movie while interacting with robots	4.40	4.45	4.35	4.27	4.64
4. Social pressure					
a. The ability to interact with robots is highly valued by other people	4.26	4.31	4.21	4.15	4.45
b. All my friends have robots which help them with their daily activities	3.16	3.15	3.17	3.13	3.22
c. All people I value use robots in their daily activities	3.20	3.12	3.27	3.18	3.24
5. Learning processes					

a. The interaction with robots requires specific learning processes	5.06	5.05	5.06	4.97	5.22
b. I'm open to learning the required commands in order to optimize the activity with a robot	5.09	5.16	5.01	5.13	5.00
c. I find it easier to perform some activities alone instead of giving the required commands to a robot	4.49	4.53	4.46	4.46	4.56
6. Willingness to buy					
a. I would like to interact with a robot which can help me with my daily activities	4.66	4.66	4.67	4.63	4.72
b. I wish I had a robot to help me with my daily activities	4.87	4.86	4.88	4.91	4.80
c. I am willing to buy a robot which can help me with my daily activities	4.51	4.51	4.50	4.47	4.57
7. Self-fulfillment					
a. I think the interaction with a robot will not affect my social relationships with family and friends	4.67	4.66	4.68	4.72	4.56
b. The interaction with a robot is strict professional and is not affecting my feelings towards other people	4.99	4.99	4.98	4.93	5.09
c. I don't think I will be addicted to a robot	4.91	4.87	4.96	4.83	5.06
d. I don't think that performing activities with a robot can affect my personality	5.10	5.14	5.05	5.06	5.17
e. I don't think that performing activities with a robot can reduce my human social skills	5.06	5.16	4.95	5.09	5.01

Source: Own research results

The third factor which has been analyzed was the **hedonic pleasure**. Based on these results, we attempted to determine if the interaction with artificial intelligence is nowadays based on simple pleasure or curiosity. However, this category of questions had rather lower ratings when it was associated with words as “fun” or “science fiction” and higher ratings when correlated with the high degree of novelty which artificial intelligence still brings with it. When asked if an interaction with a robot is fun, people over 30 years old rated this statement with a higher mean in comparison with people under 30 years old, while the gender did not make such a big difference ($M_{3a \text{ total}} = 4.64$, $M_{3a \text{ women}} = 4.62$, $M_{3a \text{ men}} = 4.66$, $M_{3a <30} = 4.56$, $M_{3a >30} = 4.78$). The fact that the interaction with the robot is fascinating due to the novelty degree it brings with was rated higher by women and by people over 30 in comparison to people younger than 30 ($M_{3b \text{ total}} = 4.86$, $M_{3b \text{ women}} = 4.92$, $M_{3b \text{ men}} = 4.79$, $M_{3b <30} = 4.78$, $M_{3b >30} = 4.99$). Finally, the feeling of taking part to a science-fiction movie while interacting with robots is more pregnant in women than in men and also in respondents older than 30 in comparison to the ones below the age of 30, as expected ($M_{3c \text{ total}} = 4.41$, $M_{3c \text{ women}} = 4.45$, $M_{3c \text{ men}} = 4.36$, $M_{3c <30} = 4.28$, $M_{3c >30} = 4.64$).

The next factor which was evaluated is the **social pressure**. This category of questions had the smallest ratings if we compare the total mean of this factor with the ones from the other six categories, which means that the respondents did not consider that the social pressure would be an important factor in deciding to interact with an artificial intelligence system on a daily basis. When asked if the ability to interact with robots is highly valued by other people, women agreed with this statement more than men. Moreover, people older than 30 found this statement significantly more true than respondents younger than 30 ($M_{4a \text{ total}} = 4.26$, $M_{4a \text{ women}} = 4.31$, $M_{4a \text{ men}} = 4.22$, $M_{4a <30} = 4.16$, $M_{4a >30} = 4.45$). The overall ratings were particularly low for the second statement which said that all their friends have robots which help them with their daily activities. A significant difference is again brought by the age groups, as people over 30 gave a higher rating to this statement than the ones younger as 30 ($M_{4b \text{ total}} =$

3.17, $M_{4b \text{ women}} = 3.15$, $M_{4b \text{ men}} = 3.18$, $M_{4b <30} = 3.13$, $M_{4b >30} = 3.23$). The last question checked if all people the respondents value are using robots in their daily activities and while the total mean is the lowest in comparison with all the other total means from all categories, we noticed a difference between the responses based on both age and gender: in general, this statement was rated higher by man than women and by people over 30 than people under 30 ($M_{4c \text{ total}} = 3.20$, $M_{4c \text{ women}} = 3.12$, $M_{4c \text{ men}} = 3.28$, $M_{4c <30} = 3.18$, $M_{4c >30} = 3.24$).

The learning processes which respondents are willing to undergo in order to be able to properly interact with robots and artificial intelligence is another factor which can influence the overall tolerance towards the use of technology in our everyday life. This is one of top three factors which was rated by the respondents, which means that it was significantly important for their decision of accepting help from artificial intelligence systems. Both women and men agreed to the same level that the interaction with robots requires specific learning processes, while people older than 30 found this statement particularly more true than people under 30, for which the learning processes are probably something they deal with every day and to which they are already used to ($M_{5a \text{ total}} = 5.06$, $M_{5a \text{ women}} = 5.06$, $M_{5a \text{ men}} = 5.07$, $M_{5a <30} = 4.97$, $M_{5a >30} = 5.23$). As a reinforcement to this theory, people younger than 30 agreed more with being open to learning the required commands in order to optimize the activity with a robot than people older than 30 ($M_{5b \text{ total}} = 5.09$, $M_{5b <30} = 5.14$, $M_{5b >30} = 5.01$), while the mean for women was also higher than the one for men ($M_{5b \text{ women}} = 5.16$, $M_{5b \text{ men}} = 5.02$). However, there are no differences based on gender for the last statement, which implies that in many situations they find it easier to perform some activities alone instead of giving the required commands to a robot ($M_{5c \text{ total}} = 4.50$, $M_{5c \text{ women}} = 4.46$, $M_{5c \text{ men}} = 4.46$). Significant differences are only based on age, as respondents older than 30 rated this statement higher than respondents under 30 ($M_{5c <30} = 4.46$, $M_{5c >30} = 4.56$).

The sixth factor we attempt to analyze is the respondents' **willingness to buy** an artificial intelligence system. When asked if they would like to interact with a robot which can help them with their daily activities, the means were very similar to both women and men ($M_{6a \text{ total}} = 4.67$, $M_{6a \text{ women}} = 4.66$, $M_{6a \text{ men}} = 4.67$). However, the two age groups offered a slight difference with their assessments, as people over 30 were more open minded to this idea than people younger than 30 ($M_{6a <30} = 4.64$, $M_{6a >30} = 4.73$). While having to assess the wish of having a robot to help them with their daily chores, there was again no significant difference between gender groups ($M_{6b \text{ total}} = 4.88$, $M_{6b \text{ women}} = 4.87$, $M_{6b \text{ men}} = 4.89$). However, this time people younger than 30 rated this wish higher than people older than 30 ($M_{6b <30} = 4.91$, $M_{6b >30} = 4.81$). Finally, the actual intention to buy a robot which can help them with their daily activities was again not very different based on the gender of the respondents, but again on their age with a surprising result, as this time people older than 30 found themselves more ready to actually make an acquisition of a robot or of a system of this kind, while people under 30 do not have such a strong intention, leaving it to the level of a wish ($M_{6c \text{ total}} = 4.51$, $M_{6c \text{ women}} = 4.52$, $M_{6c \text{ men}} = 4.50$, $M_{6c <30} = 4.48$, $M_{6c >30} = 4.57$).

The last category consists of five statements which refer to the degree of people's **self-fulfillment** which can affect or not the tolerance towards artificial intelligence. The first statement implied that the interaction with a robot will not affect the respondents' social relationships with family and friends. While there was not a big difference between men and women, the people younger than 30 rated this statement significantly higher than people under 30 years old ($M_{7a \text{ total}} = 4.67$, $M_{7a \text{ women}} = 4.66$, $M_{7a \text{ men}} = 4.68$, $M_{7a <30} = 4.73$, $M_{7a >30} = 4.57$). However, the situation shifted in the opposite direction in the second case, where people older than 30 agreed more that the interaction with a robot is strict professional and is not affecting their feelings towards other people, while people under 30 years old had a smaller mean ($M_{7b \text{ total}} = 4.99$, $M_{7b \text{ women}} = 5.00$, $M_{7b \text{ men}} = 4.99$, $M_{7b <30} = 4.94$, $M_{7b >30} = 5.09$). People older than 30 years old also strongly believed that they will not develop an addiction to a robot. The mean was also higher for men than for women for this statement ($M_{7c \text{ total}} = 4.92$, M_{7c

women = 4.87, $M_{7c \text{ men}} = 4.97$, $M_{7c <30} = 4.84$, $M_{7c >30} = 5.07$). The female group and the people over 30 also offered also a higher rate to the statement which implied that that performing activities with a robot can not affect their personality ($M_{7d \text{ total}} = 5.10$, $M_{7d \text{ women}} = 5.14$, $M_{7d \text{ men}} = 5.06$, $M_{7d <30} = 5.06$, $M_{7d >30} = 5.17$).

The last question was meant to assess if performing activities with a robot will not reduce peoples' human social skills. To this, women strongly agreed that their social skills will not be reduced, while men had a lower mean and people under 30 had a slightly higher mean than people over 30 ($M_{7e \text{ total}} = 5.07$, $M_{7e \text{ women}} = 5.17$, $M_{7e \text{ men}} = 4.96$, $M_{7e <30} = 5.09$, $M_{7e >30} = 5.01$), which can suggest that people older than 30 are assessing this statement with more caution.

The overall means per each factor can be found in Table no. 2. At this point, we find it also interesting to analyze which factors were rated as more important and which were rated as less important in the decision of interacting or not with a robot on a daily basis.

Table no. 2 Overview of total means for each factor

Factor	Total	Women	Men	Age < 30 years	Age > 30 years
1.Efficiency	4.8116	4.8700	4.7520	4.7495	4.9246
2.Increase in quality of life	5.3094	5.2851	5.3343	5.2837	5.3563
3.Hedonic pleasure	4.6324	4.6622	4.6020	4.5374	4.8053
4.Social pressure	3.5435	3.5299	3.5574	3.4899	3.6412
5.Learning processes	4.8841	4.9178	4.8497	4.8574	4.9326
6.Willingness to buy	4.6847	4.6828	4.6867	4.6743	4.7036
7.Self-fulfillment	4.9502	4.9689	4.9312	4.9325	4.9825

Source: Own research results

It can be noticed that the seven factors were rated in the next order, based on the influence they have on the interaction with artificial intelligence: **increase in quality of life, self-fulfillment, learning processes, efficiency, willingness to buy, hedonic pleasure, social pressure**.

Table no. 3 Differences in rating the influence of the factors depending on gender and age

Factor	Differences based on gender ($M_{\text{total women}} - (M_{\text{total men}})$)	Differences based on age ($M_{\text{total >30}} - (M_{\text{total <30}})$)
1.Efficiency	0.12	0.18
2.Increase in quality of life	-0.05	0.07
3.Hedonic pleasure	0.06	0.27
4.Social pressure	-0.03	0.15
5.Learning processes	0.07	0.08
6.Willingness to buy	0.00	0.03
7.Self-fulfillment	0.04	0.05

Source: Own research results

Moreover, women found efficiency, learning processes and hedonic pleasure particularly more important than men, when it comes to the decision of accepting artificial intelligence and robots in their lives, while men found in general the increase in quality of life and the social pressure more important than women. People older than 30 years old attributed more importance to factors such as hedonic pleasure, efficiency and social pressure than people younger than 30 years old. These can be observed in table no. 3.

Conclusions

The results of the research show that the main reasons of consumers to accept artificial intelligence is the improvement of the quality of life, while social pressure of having a robot is the least important factor. With the presence of robots in the everyday life of consumer, they have to be aware that each click or action on the internet or on social media is recorded, compiled and analyzed. Therefore it can be concluded that there is a compression of the physical and virtual reality. The algorithms provide consumers with the products and services they expect, saving time and increasing the efficiency of processes. With artificial intelligence consumers can do a lot of things both in the professional and in the private life.

We can conclude that our behavior is influenced by artificial intelligence much more than we think. This makes us wonder and also sets the research questions for the future of how far will the development of artificial intelligence go and of how will the lives of consumer change. The results show that younger consumers are more open to artificial intelligence, fact confirmed in previous studies (Pelau & Ene, 2018). Therefore it can be concluded that their applications and use of artificial intelligence and robots will increase in the future.

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CONSUMERS' PERCEPTION ON DATA STORAGE AND BROWSING HISTORY DEPENDING ON THEIR DEMOGRAPHIC CHARACTERISTICS

Mihaela Stănescu¹ and Miruna Niculescu²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: miha_stanescu2019@yahoo.com; E-mail: miruna_niculescu@yahoo.com

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Abstract

The digital revolution has changed in a great manner the way in which consumer interact and inform themselves. Many of the daily activities of consumers are done via internet or mobile devices or at least accompanied by one of these. This switch to the online world has brought many advantages in terms on interactivity, permanent connection to the online social community, but also many disadvantages. Among the greatest disadvantage is the possibility of companies to collect and to store the online the activities done by consumers in the online world. In this paper there are presented the results of a research about the perception of consumers on online data storage and browsing history and its use for marketing purposes. A comparative analysis of the perception of different demographic groups such as gender, age and income is done. The results show that consumers don't agree with the storage of personal data from the web and in the same time they don't believe that they can be manipulated with the help of these data.

Keywords

Browsing history, online information, cookies, consumers, big data, demographic characteristics

JEL Classification

M10, M31

Introduction

Today's online consumers inform themselves, come into contact with the brands of interest very easily, make decisions alone, and sometimes can influence the image of a company or business on the internet. In this way, the brands that give particular attention to their image in the online environment are motivated to create a well-documented marketing strategy (Belanche et al., 2017). Therefore, measuring consumer behavior is the link between the purchase decision and an effective strategy. In a society in which the online commerce plays

an important role for any company, knowing the customers' requirements in advance, the product evaluation and understanding the consumer typologies have a major impact on the online strategy of each company (Pelau and Acatrinei, 2019). In this context, the current topic has started to be taken into consideration, in particular the analysis of the behavior of consumers on the internet, observation and recognition of their preferences (Velea, 2016). In the first part of the paper, there are presented theoretical aspects regarding the online consumer behavior as well as the methods by which companies collect consumer data on the internet. Cookies, apps and storing the browsing history of consumers has become an important research tool for companies. The main issue related to the online consumer data refers to the protection of the online data of consumers. In this paper there are presented the results of a research regarding the consumers' perception on the collection and storage of online data and browsing history depending on their demographic characteristics. A comparison between women and men, two age groups and two groups with different income level is done revealing their agreement to this phenomenon as well as the possibility to be manipulated with the help of this data.

Literature Review

The Internet and evolving technologies offer unique opportunities to bring together and organize personal information about individual users in specific profiles. As a result, over time, targeted marketing, in particular the use of consumers' personal information from specific profiles from databases, has become a treasure for the o. Targeted marketing requires the collection, storage and analysis of information about users. Since it is based on valuable consumer information, websites are able to charge a premium fee, to place ads where marketers think they have the best place so that they can be in line with their chosen parameters. Websites and ad networks can take several approaches for collecting and using personal information. A large number of third parties can collect personal data from the internet. For some companies, data collection is just a side business; other companies consciously track internet users, organize this data and sell the profile together with the information they have developed. In many cases, the individual websites collect information themselves. For example, Facebook uses information from users to insert targeted advertisements on the pages of individuals. If a user who belongs to a certain age group has spoken about travel or reports about childbirth on Facebook, he or she should get advertisements on these topics. Another example is Amazon.com, which suggests products to customers based on their past purchases and / or searches. In both cases, the websites, like the examples mentioned earlier, Facebook and Amazon, use information they have collected in order to make it easier for consumers to reach them (Christiansen, 2011).

Marketers are "hungry" for personal information that helps them to invest their money more effectively for targeted advertising. The online advertising industry alone is worth \$ 23 billion and continues to grow (Angwin; Valentino-DeVries, 2010; Christiansen, 2011). For companies looking to commercialize their products and services, information about a person's demographics, income, interests and habits is a gold mine. Marketers and business people know that a customer is more likely to make a purchase if the message is right for him or is targeted rather than being more general. This is known as targeted marketing, and although it is far more expensive than traditional advertising, it is also more profitable and beneficial due to the fact that the company will no longer target the whole array of consumers. That way there will be less wasted coverage. However the question that arises is: how do marketers collect and use this information to effectively target ads? The internet has been the best answer to this question ever since (Christiansen, 2011).

Nowadays, consumers benefit from more information, for a greater variety of products as they can buy the desired products either online or directly in the store, they can compare prices, observe the quality and also give useful feedback to the seller that can be taken into

consideration by other consumers. The feedback given could have a negative impact on future potential sales, if consumer expectations are not met or if they do not match with the offered experience or the goods acquired. The feedback can reach a large number of people in real time and there is a tendency that the bad experiences have a stronger impact on people compared to the positive and valuable ones. The negative interaction with a provider persists more in the collective memory of consumers and it is well-known that word of mouth spreads faster and easier with the help of today's technologies. It seems that customers, and especially those online, are in an advantageous position, however, there are not only benefits for consumers and their protection, as the progress and social media platforms and networks has also led to negative aspects. Many authors have reached the same conclusion that the use of social media networks exposes users to various risks (Haynes, et al., 2016; Vatamanescu et al., 2017) and influences the offline and online behavior of consumers (Pelau and Acatrinei, 2019). Private data security, misuse of information and intrusion in the private sphere are just a few examples that many consumers tend to disregard and which represent clear problems for which stricter rules should be found. The manipulation of consumer decisions through targeted communication and the spreading of fake news (Tantau et al., 2018) are also cases of exposure on the Internet, for naive and inexperienced online consumers. (Pelau et al., 2019) Marketers are constantly trying to increase stimulation, in particular to arouse interest and make efforts to attract viewers on the Internet and transform them into potential consumers (Lang, 1990; Belanche et al., 2017). Consumers respond to certain incentives and stimuli, they pay more attention to stimuli that generate a high level of arousal, such as: sexuality, risk behavior, unexpected movement or unexpected behavior (Bakalash and Riemer, 2013; Belanche et al., 2017). Some ad design features, such as unedited or simply new content, are often viewed as stimulation factors (Bialkova and van Trijp, 2010; Belanche et al., 2017). Storytelling or presenting the ad in a narrative manner is a type of promotion that communicates to consumers about a brand (Woodside et al., 2008), product or service in a story-like format (Wentzel et al., 2010). In the current context of digital information excess (Sicilia and Ruiz, 2010) and ad blocking technologies (Kelly et al., 2010), marketers face the challenge of creating ads that people want to see instead of perceiving them as disturbing interruptions. For this purpose, storytelling in advertising is an innovative tool for brands to remain active in the market (Zada, 2016).

Consumer information on the internet is frequently collected with the help of cookies. An "internet cookie", also known as a "cookie browser", "HTTP cookie" or simply "cookie", is a small piece of information that is stored on someone's computer or on a devices that is connected to the internet. The cookie is sent via a web server request from a browser, it is installed and it is completely "passive", it contains no software, viruses or spyware and cannot access the information on the hard drive of the user (Velea, 2016).

Cookies have an essential role in the experience of consumers on the internet on certain websites by making it easier to access and provide multiple services. The personalization of some settings is a big advantage, that allows the language in which a website is used, the currency in which the prices or tariffs are calculated to be selected and products to be displayed, with a certain size or with desired details. What is special about this experience is the fact that these settings will remain saved, and each time the consumer accesses the same website, an individualized display of the website will appear based on the previous preferences. Cookies provide website owners with feedback on how their websites are used by users, so that they gradually make their websites more effective and accessible. Cookies can also be used to display multimedia applications, various types of advertisements or online services on the websites accessed from other sites in order to create a valuable, useful and pleasant browsing experience. Cookies also contribute to the efficiency of online advertising. (Ministerul Muncii si Justitiei Sociale, Autoritatea Nationala pentru persoanele cu dizabilitati, 2019).

Another issue related to the collection of data on internet and social media networks is data privacy and the security of the data. The fascination of social media networks has prompted consumers to publish several private information and images in the online environment, without taking into account the risks associated with their presence on the internet. With the development of business orientation and presence in social media, the need for a certain regulation in the provision of data in the online environment increased. According to Lessig (2006), there are four types of regulation of data protection and data content on the Internet: law, standards or self-regulation, system architecture into which the data are introduced, and markets. The law is one of the instruments that can be used to restrict data protection regulations on internet. However, when the consumer is ready to publish their private information on internet, it is difficult to restrict the flow of data. For this reason, self-regulation is important when it comes to posting data on social media platforms. Another important aspect is the system architecture, which enables the tracking of consumer behavior in the online environment as well as the various companies that use the data for profit purposes (Pelau et al., 2019).

Methodology

The objective of this research is to determine the consumer's perception regarding the collection and use of online browsing history for marketing purposes. Online browsing history generated by a consumer when searching specific online content is stored with the help of the online cookies and may define a particular pattern in consumer's interests and preferences. The research was developed in order to analyze if the consumers appreciate the benefits of online browsing history or if they consider it intrusive in their personal lives, the main disadvantage being the possibility of manipulation. The questionnaire used in the research was distributed to a sample of 252 people.

The questionnaire contained 45 items, measured with the help of a Likert scale with values from 1 to 7, where 1 means that they disagree with the scenario or with the presented statement and 7 means that they fully agree with the statement or with the scenario. The sample contained consumers from different age groups with different levels of education and employment, so that our research could be valid and comprehensive. The analysis is based on the average values and they are used in order to make comparisons between age groups/differences, education level, gender and income level, as well as comparisons between demographic groups.

Results and discussion

The results of our survey highlight the consumer's perception towards storing their browsing history, considering three criteria: the gender, the age (less than 40 years old and above 40 years old) and income (less than 1.000 Euro per month and higher than 1.000 Euro per month). The survey was developed based on consolidated sample composed as described in figure 1.



Fig. no. 1 Structure of the sample and the analyzed groups

Source: Own research design

The first analysis (Table no. 1) was structured based on the gender criteria, therefore we noticed that men are more influenced than women by the online advertising and they also believe that they cannot be manipulated through their browsing history (3.5868 men). However, men consider more than women, that saving their browsing history may represents an intrusion in their personal life. Also, for this item, scores for both genders are above the average (4.6870 women, 4.9587 men) that represents their concern related to the data access that particular parties may have over their personal information. This may represent that respondents value their privacy.

On the fourth item, regarding the personalized advertising, the scores for women and man are below the average, that signifies that they are disturbed about the fact that companies can access their browsing history based on which they may develop personalized ads. Analyzing the fifth item regarding an easier life based on cookie information, the scores are below the average, respondents admitting the fact that online cookies may not be such a helpful tool for a faster and easier online search. This information could be related more to the e-commerce activity, where if a search and purchase is finish, some companies continues advertising for the same products or in the same range of products, fact that can be annoying for consumers.

Table no. 1 Consumers' perception regarding the storage of browsing history depending on gender

Items	Women	Men	F	p
I am influence by the online advertising	3.0763	2.4959	7.185	.008
I don't belive that I can be manipulated through my online browsing history	4.0916	3.5868	4.345	.038
I consider that saving my browsing history represents an intrusion in my personal life	4.6870	4.9587	1.311	.253
I agree that an online company to save my browsing history in order to personalize its advertising ads for me	2.5573	2.7438	.803	.371
I believe that online cookies make my online activity easier	3.3588	3.5289	.687	.408
I agree that an online company to save my search history, in order to make my online activity more easier	2.8092	2.8760	.097	.755
I consider that saving and knowing my browsing preferences helps me easier reach the content I am looking for	3.5649	3.5702	.001	.980

Source: Own research results

The sixth item refers to the fact that companies saves the consumers browsing history in order to make their activity more easier, still the scores for both women and men are below the average (2.8092 women and 2.8760 men) that represents that both do not agree for the companies to record their activities. The last item has scored similar for women and men; they both consider that saving browsing preferences may not help them to reach faster the content that they are looking for.

The second analysis was developed by considering the age range (table no. 2), we noticed that both categories do not agree for the companies to save their browsing history in order to receive personalized ads and also they consider that online cookies do not help them to navigate easier on the web. The responds above 40 years old are more convinced than the younger ones, that they cannot be manipulated through their online browsing history; some part of the individuals in this age range may not have the same grade of internet consumption as the younger do, therefore this aspect can be the reason behind their believe. Both categories

consider that they are not influenced by the online advertising, having significant scores (2.7840 people <40 years old and 2.8222 people >40 years old). Most of the online companies use Google Analytics in order to track their consumers activities on the websites and to observe what were the main traffic sources from where the consumers come on the site. This benefit is a valuable one for the companies, based on which the company will direct advertising budgets in order to influence the consumers.

Regarding the last item, both categories tend to believe that saving their browsing history may represent an intrusion in their personal life. This item seems to have a high importance for the respondents as people start to understand more that with the current technology that can make our lives easier, we are also more exposed to provide personal information (example: location base - mobile phones).

Table no. 2 Consumers' perception regarding the storage of browsing history depending on age

Item	Age < 40 years	Age > 40 years	F	p
I agree that an online company to save my browsing history in order to personalize its advertising ads for me	2.7963	2.3778	3.762	.054
I agree that an online company to save my search history, in order to make my online activity more easier	2.9815	2.5889	3.128	.078
I believe that online cookies make my online activity easier	3.5741	3.2000	3.085	.080
I don't believe that I can be manipulated through my online browsing history	3.7346	4.0556	1.599	.207
I consider that saving and knowing my browsing preferences helps me easier reach the content I am looking for	3.6420	3.4333	.856	.356
I am influence by the online advertising	2.7840	2.8222	.028	.867
I consider that saving my browsing history represents an intrusion in my personal life	4.8086	4.8333	.010	.921

Source: Own research results

The third analysis was structured considering the income range and it can be observed in table 3. We noticed that both categories do not agree for companies to save their browsing history in order to receive personalized ads. Also, both categories are below the average scores for the items related to companies saving their browsing history in order to make their online activity easier (2.7410 people with income <1.000 Euro and 2.9545 people with income >1.000 Euro).

Respondents strongly consider that they are not influenced by the online advertising (2.7266 people with income <1.000 Euro and 2.8909 people with income >1.000 Euro). Both categories tend to not approve that online cookies may easier their online activity that they cannot be manipulated through it and does not embrace the benefits of browsing history in order to easier reach a specific content. Also, both categories tend to strongly consider that storing browsing history represents an intrusion in their personal lives.

Table no. 3 Consumers' perception regarding the storage of browsing history depending on income

Item	Income < 1000 Euro	Income > 1000 Euro	F	p
I agree that an online company to save my browsing history in order to personalize its advertising ads for me	2.4964	2.8364	2.594	.109
I agree that an online company to save my search history, in order to make my online activity more easier	2.7410	2.9545	.964	.327
I am influence by the online advertising	2.7266	2.8909	.543	.462
I believe that online cookies make my online activity easier	3.3741	3.5091	.419	.518
I don't believe that I can be manipulated through my online browsing history	3.9065	3.8091	.156	.694
I consider that saving and knowing my browsing preferences helps me easier reach the content I am looking for	3.5396	3.6000	.075	.784
I consider that saving my browsing history represents an intrusion in my personal life	4.7914	4.8455	.050	.823

Source: Own research results

Conclusions

The results of our research presents the consumer's perception regarding the online browsing storage, the reaction to the main benefits representing the facility of easier online browsing that it is not embraced by the respondents no matter of gender, age group or income level. The consumer tends to be more aware of the main disadvantage of the data storage that is the personal information access that they give to certain entities.

These information can be used in order to make the activity of the consumer easier on a specific website or it allows him/her to faster reach the desired content, based on the previous searches. In the same time, this represents the main tool used by the online companies in order to profile the consumers and to deliver more personalized advertising ads in order to attract new clients or to increase particular sales.

People are more aware of the importance of their privacy therefore are not open to the idea of online companies to have access to their personal information. However the topic of data storage remains an important one that still needs further studies in order to discover a balance between the data provided by the consumer and the generated benefits.

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THE INFLUENCE OF THE INTERNAL MANAGERIAL CONTROL ON THE CORPORATE GOVERNANCE WITHIN THE PUBLIC ENTITIES

Silvia Mioara Ilie (Troi)¹ and Aurel Dincă²

^{1) 2)} *University of Craiova, Romania*

silviailie28@yahoo.com; aureldinca@yahoo.com

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Abstract

The instability that characterizes the current economy has a significant impact on the way in which the economic entities carry out their activity. The internal managerial control can provide to the management data regarding its progress or regression in reaching the proposed objectives. The purpose of the internal management control system is to prevent errors and irregularities, preventively eliminate the causes that determine them and to improve the controlled activities within the corporate governance. The internal management control offers a reasonable assurance, but not absolute, that the public entity fulfills its proposed objectives. Public entities must adhere to all concepts, principles, standards and regulations of corporate governance, in order to be evaluated and achieve the relevant expected policies and performance, and corporate governance codes and policies have become a balance between compliance and performance. Corporate governance is a concept that encompasses a wide range of activities, rules, processes and procedures, designed to ensure the optimal use of the resources and strategies of the entities, so that its objectives are achieved. This article represents the analysis of the objectives of the main internal control procedures regarding the optimization of the corporate governance process.

Keywords: internal managerial control, corporate governance, procedures, process.

JEL Classification: G34

Introduction

Control in its semantic acceptance is a permanent or periodic analysis of an activity, of a situation in order to track its progress and to take measures to improve it. At the same time, control means continuous moral and material supervision, as well as the control of an activity, of a situation (Bunget et al., 2009).

Internal control is made up of all the forms of control exercised at the level of the public entity, including the internal audit, established by the management in accordance with its objectives and with the legal regulations, in order to ensure the management of the funds economically, efficiently and effectively, which includes the organizational structures,

methods and procedures. Internal control standards have a general form that was necessary to allow managers to customize them according to the legal, organizational, personnel, and financing characteristics of each public entity (Morariu et al., 2008).

Corporate governance means the management of the entire organization as a whole by accepting all internal components, which work together, which will ultimately be integrated with the management, and the implementation of risk management within the organization and the system of financial management and internal control. In international practice, most solutions for the implementation of corporate governance policy and principles have taken the form of codes of good practice and they appear as regulations or guidelines and represent a way of organizing and managing organizations and public services. Corporate governance describes the methods and systems used to run organizations of all types and sizes, public or non-profit, and also companies in the private sector and those built in the form of partnerships (Achim and Borlea, 2013).

The concept of (corporate) governance has been used in national institutions, commercial organizations, but also in the administration of the occupied colonies and territories. Subsequently, the concept of corporate governance was developed in the private sector and was taken over and applied in most areas of activity. In recent years it has expanded rapidly, especially to public sector organizations (Feleagă, 2008).

The main purpose of the research is the analysis of the objectives of the main internal control procedures regarding the optimization of the corporate governance process.

The structure of this article is based on the concept of internal control and corporate governance as the main functions of management within public entities, which are responsible for the organization.

The subject of this article is concerned with the permanent updating of the internal control system, due to the evolution of the risks faced by the entity.

Literature Review

The expression internal control comes from the English term internal control, which for Anglo-Saxons to control, first of all means to have control (to keep under control) and secondly to erect, while in Latin-speaking countries, the meaning this expression is the exact opposite, coming from the combination of the words against and the role used in the Romanian military environment and it is understood, in the broad sense, the verification of an act after the original (Morariu et al., 2008). Within public entities, Internal Control has a considerable impact on the credibility of a government and its operations. In the United States of America in 1992, the Integrated Internal Control Framework was published by COSO; In the beginning, this framework referred only to private companies, currently being applied on a large scale, worldwide, in both the public and private sectors. In 1996, the European Parliament initiated the formation of a commission of independent experts to analyze how this body detects and treats fraud, practices in awarding financial contracts, mismanagement and the practice of nepotism. In 1999, the Prodi Commission of the European Parliament introduced a number of reforms in the field of internal control. The White Paper on managerial reforms within the European Commission services is published in 2000; With the entry into the European Union of the new member countries and the allocation of funds to them, it was desired to respect the principles established by the White Paper and to put in place a unitary internal control framework, in all public entities, in order to analyze the way in which these funds are administered. In 2017, the European Commission updates its Internal Control Framework to align it with the Integrated Internal Control Framework - COSO 2013 (Bunget et al., 2009).

In the last decades, the management of all public entities realized the need for a basic control framework, which would be the support for the construction of their own internal control

systems and became, increasingly concerned about the organization and functioning of the internal control, constantly seeking practical solutions (Avram, 2003).

A simple definition of corporate governance would be all of the systems and processes implemented to run and control a company in order to increase its performance and value (Morariu et al., 2008). Basically, it refers to the efficiency of the management systems, insisting on the role of the board of directors, on the responsibility and remuneration of the members, the credibility of the financial statements, and on the efficiency of the risk management systems. Corporate governance defines all the principles, rules and norms that ensure the management and management by the entities of the entities, in the interest of the current and potential investors; this interest is classic and the most common. In its context, managers are studied in relation to shareholders. In terms of a political relationship, in which other stakeholders are found, governance is gaining an extended interest. A distinct place is occupied by the managers, shareholders, creditors and employees, with their claims. Governance and accounting are mutually dependent, although governance dominates accounting. In principle, it refers to the decision and control support of a company, obtained through formal and informal rules and procedures, internally or externally imposed by the competent bodies, implemented at both strategic and operational level. It is estimated that corporate governance systems in the US, Germany, Japan and the UK are some of the best in the world, and the differences between them are not so significant compared to other states (Ghiță et al., 2009).

In less developed countries, including those in transition, corporate governance mechanisms are virtually non-existent. Corporate governance mechanisms differ quite a lot internationally. In the US and the UK, legal protection of investor interests is considered very important and, under these circumstances, the occurrence of investor concentration phenomena is relatively sporadic, with the exception, perhaps, of takeover operations. In continental Europe and Japan the phenomenon is exactly the opposite. In Germany, for example, large commercial banks, through commitments on voting power, can control more than a quarter of large companies, collecting relatively consistent parts of their cash flow, as a significant shareholder or as and creditors (Dragomir, 2012). The diversity of corporate governance systems leads us to the fundamental question: which of these is more appropriate when the question of external financing is raised? Both the legal protection of investor interests and the presence of their concentration phenomenon (US, Germany, Japan) are forms of manifestation of corporate governance systems (Feleagă, 2008).

Research and method

The research objective is the evaluation of the main internal control procedures that are applied within public entities regarding the optimization of the corporate governance process. In the research carried out, 250 managers from Romania were involved in four public entities in the fields: education, healthcare, emergency situations and public administration. The research took place between December 2019 and February 2020. The research was based on the use of the questionnaire that was sent by email and was greatly honored in this study, and it was a succession of electorates.

In the socio-economic universe, the economic decision assisting problems are generated by the multi-criteria decision processes; this is why we used the *maximum global utility method* in the study.

The model tries to use, at maximum, in a scientific way, the informational base, and the procedures for imitating the rational mode of decision making is, in more or less elaborate forms, the conceptual essence of the models.

The steps of the global utility method are as follows:

Step 1. We build the utilities matrix with the elements x_{ij} , $i = 1, \dots, r$ and $j = 1, \dots, n$. (1)

Each matrix element is calculated for the maximum criterion with the expression:

$$x_{ij} = u_{ij} = \frac{x_{ij} - x_{i \min}}{x_{i \max} - x_{i \min}}, \quad (2)$$

and each minimum criterion with the expression:

$$x_{ij} = u_{ij} = \frac{x_{i \max} - x_{ij}}{x_{i \max} - x_{i \min}}, \quad (3)$$

where:

x_{ij} = value of the i indicator associated to the j indicator;

$x_{i \max}$ = minimum value of the i indicator;

$x_{i \min}$ = maximum value of the i indicator.

Step 2. We calculate the global utility for each project, as the sum of the products between the utility matrix elements (the column vector corresponding to the project) and the importance coefficient given for each indicator.

$$UG_j = \sum_{i=1}^r \alpha_i u_{ij}, \text{ unde } \sum_{i=1}^r \alpha_i = 1 \quad (4)$$

Step 3. We choose the project to which the V_j maximum global utility corresponds.

$$\max\{UG_j\} \Rightarrow V_j \quad j = 1, \dots, n \quad (5)$$

For differentiating a decisional V_i variant (given n variants), and for selecting the best offer by simultaneously considering various assessment criteria (C_j , $j = 1, \dots, n$) we use the maximum global utility method. Finding the best combinations of attributes (characteristic of a variant) forms the object of the multi-attribute problem. This involves the transformation of all number values a_{ij} (expressed in the associated measure units) and qualitative characteristics in utilities u_{ij} , i.e. numerical values (adimensional) located in the range $[0, 1]$. The basic hypothesis in the correct functioning of the weighted sum method is the criteria independence. The greatest of the synthesis utilities shows the best variant.

The research study is based on analyzing how to apply the main main internal control procedures that influence the optimization of the corporate governance process. In the process of data analysis, the process of influencing the internal control over corporate governance was approached as a complex system based on five objectives:

O1 - Carrying out at the appropriate level of quality, the tasks of public entities, established in accordance with their own mission, under conditions of regularity, efficiency, economics and efficiency;

O2 - Compliance with law, regulations and management decisions;

O3 - Protecting public funds against losses caused by errors, abuse or fraud;

O4 - Development of systems for collecting, storing, processing, updating and disseminating financial and management data (information);

O5 - Application of the notions and tools necessary for the implementation and development of the internal management control system.

Table no. 1 presents the informational basis of the study, respectively the weight of the importance accorded to the managers of each objective.

Table no. 1 Importance of system objectives

OBJEC- TIVES	FIELD OF ACTIVITY			
	EDUCATION % (v1)	HEALTHCARE % (v2)	EMERGENCY SITUATIONS % (v3)	PUBLIC ADMINISTRATION % (v4)
O1 (c1)	16.45	22.35	27.5	12.5
O2 (c2)	10.55	15.15	11.9	23.61
O3 (c3)	8.9	13.25	9.8	10.54
O4 (c4)	23.45	16	11.82	23.55
O5 (c5)	40.65	33.25	38.98	29.8

Source: developed by the authors based on the collected data

The main results indicate that the managers first consider *O5 - Applying the notions and tools necessary for the implementation and development of the internal management control system*, and ultimately *O3 - Protecting public funds against losses caused by errors, abuse or fraud* (fig. no.1).

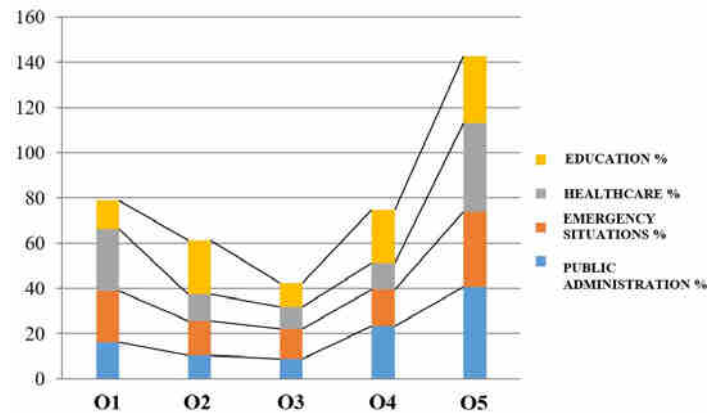


Fig. no. 1 The importance given to the objectives of the system

Source: the author's own concept

The execution of the calculation algorithm implied:

Step 1 – Building the unit matrix with the elements x_{ij} (fig. no 2)

$$\begin{bmatrix} 0.26 & 0.66 & 1.00 & 0.00 \\ 1.00 & 0.65 & 0.90 & 0.00 \\ 0.00 & 1.00 & 0.21 & 0.38 \\ 0.99 & 0.36 & 0.00 & 1.00 \\ 0.00 & 0.68 & 0.15 & 1.00 \end{bmatrix}$$

Fig. no. 2 Unit matrix

Source: the author's own concept

Step 2 – Calculating the global utilities for each organization (table no. 2):

Table no. 2 The results of the calculation of the global units

GLOBAL UTILITY	RESULT
EDUCATION	2.25
HEALTHCARE	3.34
EMERGENCY SITUATIONS	2.26
PUBLIC ADMINISTRATION	2.38

Source: the author's own concept

Step 3 - From the table no. 2 is observed by the calculation of the global utilities, the largest global utility has the healthcare organization.

Therefore, following the application of the algorithm of calculation of the method of maximum global utilities, it can be concluded that the public entities in the healthcare field have evaluated the importance of the objectives of the main internal control procedures regarding the optimization of the corporate governance process.

Conclusions

Based on the information provided by the internal managerial control, the management of the entities has the possibility to consolidate the managerial decisions regarding the activity plan, the organization and coordination of the entity structures, the exact establishment of the responsibilities on structures and the persons involved in the activities of the entity. The construction and proper functioning of this process, which is a long-term one, requires collective and individual efforts, so that it can be adapted as best to the specific and the size of the public entity, but in compliance with the legal provisions and the general principles of internal management control. The internal managerial control through its objectives and procedures aims to: ensure a good use of the resources (financial, human) and their correlation with the objectives of the public entity; improving the information flow; increased intelligibility, risk management, fraud prevention and detection and document quality. The management of the public entity must design the system of internal managerial control so that they are effective and reduce the risks to an acceptable level. Considering a number of internal or external factors (which could not be taken into account when designing the internal management control), the probability of achieving the objectives of the public entity is prejudiced by the limits of the internal control, such as:

- current changes in the internal and external environment of the public entity;
- human errors: inaccurate interpretations, errors of reasoning, negligence, inadvertence;
- abuses of authority demonstrated by some persons with the role of management, coordination or supervision;
- limitation of the independence of the personnel, in the exercise of the duties of the service;
- control procedures not adapted or adapted and not applied;
- the costs of internal managerial control.

The internal managerial control must be efficient, not generate additional costs, leading to the saving of material, financial and human resources. Although a public entity can define a good internal management control system, it can be implemented or treated subjectively by the personnel within it, due to the lack of professional training. The implementation of the internal managerial control system, through its own human resources, ensures both their continuous professional self-improvement and the elimination of additional expenses of counseling in the field

The inefficient governance of public entities adversely influences the economic-financial results and their future development possibilities through the following levers:

- the priority pursuit of short-term interests of employees and managers, the increase of salaries and other allowances, stability and protection of work places;
- lowering the pace of restructuring and reorganization or postponing the bankruptcy of companies in financial difficulty;
- the impossibility of using managers' remuneration programs according to the real value created;
- excessive mobility of staff due to internal conflicts and lack of promotion and stimulation programs according to value criteria.

Good corporate governance is based on increasing the performance of the entities, efficient risk management, as well as on the confidence of the public in these entities.

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MAJOR TRENDS IN THE DEVELOPMENT OF AIRPORTS FROM CENTRAL AND EASTERN EUROPE AND BALTIC COUNTRIES

Sorin Eugen Zaharia¹, Casandra Venera Pietreanu², Adina Petruța Pavel³ and Ruxandra Elena Boc⁴

^{1) 2) 3) 4)} *Politehnica University of Bucharest, Romania*

E-mail: sorin.zaharia@gmail.com; E-mail: casandra.pietreanu@yahoo.com

E-mail: adinappavel@gmail.com; E-mail: ruxandra.elena.boc@gmail.com

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Abstract

The economical and social development in the Central and Eastern Europe (CEE) after 2004, the admission of first 10 countries from this area in European Union has an important impact on the evolution of air transport in this area. The airline-airport relationship has developed and European airports compete to attract the services of airlines which can bring essential business development. These features of the air transport market have had a great influence on governmental policies for airport development in CEE and in Baltic Countries. In order to provide airports with strategic information for building development strategies, this paper presents a comparative analysis of the main parameters of capitals' airports development from CEE. The external and internal benchmarking approach focuses on macroeconomic parameters and airport operational parameters: airport connectivity, passenger traffic and aircraft movements. The target group is represented by capitals' airports from Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Republic of Moldova, Romania and Serbia.

By our analyse, we highlighted the correlation between economic and social evolution and air transport development and also the best practices of compared airports, which could be continued and improved for the same good evolution of air transport in CEE. Our research is focused on the evolution of the airport market and on the main challenges for the next period.

Keywords

Airport development, airport connectivity, Baltic countries, benchmarking, Central and Eastern Europe, passenger traffic.

JEL Classification

C80, L10, L93, O10, R40

Introduction

The main sources used for this analysis are the ACI Traffic Reports, ACI Reports on airport connectivity, ATAG Report, yearly reports of airlines, Eurostat data and previous analysis

undertaken by the authors. In the literature, there are articles (Adler et al., 2013), reports elaborated by ACI and ATAG on the development of air transport in Europe or in the world, but to the best of our knowledge this is the first comparative analysis of such magnitude focused on airport industry in Central and Eastern Europe and Baltic Countries.

The establishment of the single aviation market acted as a catalyst for the launch of new and innovative business strategies (e.g. the low-cost carrier (LCC)). The model is continually evolving and, in turn, is influencing the practices of the legacy airlines. The LCC model also changed airports policy investment, the airports' geography and their relations with airlines. Since 2004, after the accession of the first 11 CEE states to the EU, an interesting evolution has occurred on air transport in the region. This important political and economic moment, combined with the liberalisation of the air space and the boom of LCCs, led to important air traffic developments, especially on regional airports in CEE. In our paper, the analysis is extended, taking into consideration the economic context after the EU accession of countries from this region, and new indicators for the air transport market, such as connectivity, considered for the 2008-2019 period.

The purpose of the current article is to present our comparative analysis of the air transport trends, and market characteristics of the capitals' airports from CEE and Baltic Region, during the last 12 years in order to identify correlations between economical development and air transport evolution and to highlight the best practices which have contributed to the better successes, and furthermore to provide important elements for designing airport development strategies. The interest on airport policy in CEE and Baltic countries is because the passenger air transport in the region has had an increasing trend, maintaining significant potential for development (Zaharia and Pietreanu, 2019). For airports, the main challenges consist in the extent to which their airport and airline investment policies will use these opportunities for development, in the design of new alliances and in the geography of new routes.

The paper is structured in sections outlining the benchmarking approach, the economic context and the region market characteristics, the evolution of the operational activities in the analysed airports and its impact on the aviation market.

Airport benchmarking

The benchmarking tool is applied on the development of the airports from the region to offer a useful state of the art for supporting the airport's strategic planning process in this region. Some authors developed an airport benchmarking methodology from an airport manager's perspective in which they assume that the airport intends to maximize revenues and minimize costs, or analyze small regional airports which frequently suffer from limited traffic given minimum fixed infrastructure requirements and insufficient revenues to cover their costs, using DEA in order to estimate the relative efficiencies of a set of 85 European regional airports over the last decade (Adler et al., 2013).

Through this research, the authors performed a macroanalysis of the national passenger traffic and airport connectivity and then a benchmarking of capitals' airports in the region. The method of research is the external and internal benchmarking applied for the period of 2008-2019. The benchmarking groups measurable parameters according to the area of airport activity: economic context and operational activity. In link with airport activity, the quality of community airline service is one of the key elements for the development of airport passenger traffic and for the dynamics of airport connectivity and it is closely related to the economic development of the region. The interest of airlines for an airport is generated by the growth of the country or of the region, the foreign investments and the labor market development. The diversification of the business model of airlines in FSC, LCC, ultra LCC and charter carriers has had an important impact on the development of traffic in CEE. The LCC model has changed the passenger target group and consequently, the policy, management and airports competition. LCC operating in an airport reflects a higher load factor, point to point

flights and minimum aircraft and terminal operations. So, the quality of airlines community contributes essentially to the market positioning of airports. The development of LCCs operating in regional airports has increased their traffic and determined important investments for airport development using significant amounts from EC and member states. Increased traffic together with airport investments and introduction of new destinations (which means better connectivity), have important contributions to economic development in CEE. Air transport favors and it is favored by economic development and globalization.

The target group of our analysis is represented by the airports of 11 capitals, from the 9 EU member states from and CEE and Baltic region: Bulgaria (5 airports), Croatia (9), Czech Republic (5), Estonia (5), Hungary (5), Latvia (3), Lithuania (7), Poland (14) and Romania (16) and from 2 non-EU countries from the region: Republic of Moldova (2) and Serbia (5). Geographically, the 9 EU member states cover apx. a quarter of the EU area (23.87%) and the 11 countries represent 11.67% of Europe's surface with a total of 78 airports.

The interest on airport policies in CEE and Baltic countries is because after the crisis in 2009, air traffic and airport connectivity increased significantly in this area. Consequently, aviation brings an important contribution to sustaining economic growth in the region, followed by an increasing role of the 11 countries in the global economy. The period analyzed by our research starts with 2008, one year before the crisis for having a normal economical year as reference. As the region hosts an important number of airports, it is interesting to know how efficiently these airports are used. For this, we use as indicators the average surface of country territory corresponding to an airport and the average number of passengers per airport in each country. One can notice that the biggest average surface is in Poland (22,335 km²), followed by Bulgaria with 22,180 km². In terms of average number of passengers/airport, the most efficient use of airports is in Czech Republic, which recorded in 2019 the highest number of passenger 3,729,232/airport, while the lowest rate is reported by Estonia, with only 649,049 passengers. The positive aspect is that all countries, except for Croatia and Serbia show good dynamics with this indicator, maintain increasing trends in terms of average number of passengers per airport in the last years. By analyzing the number of airports, the average surface corresponding for each airport and the average number of passengers, we can conclude that the best policies for efficient airport use are in the Czech Republic and Poland (Zaharia et al., 2019).

Economic context and market characteristics

Economic development fosters air transport growth, which is a catalyst for economic development, Boeing estimating that 60 to 80% of air transport depends on economic growth and international trade (Delon, 2017). The existence of an airport in a region is one of the crucial elements that matter in multinational decision to invest in that region and the rate of economic growth is essential for designing the airport development strategy. For these reasons, the authors began the analysis with the economic context in order to understand the overall economic environment and policy development options.

Good GDP dynamics (fig. no.1) has a positive impact on passenger traffic, having, in general, the same trend and influences positively the airport connectivity of a country, showing the potential of economy able to attract new foreign investments and, consequently, the tendency to increase the air transport in the region. The economic policy in the region was characterized by numerous reforms and national or foreign investments with important consequences on the economic situation of population and on air transport development. Concerning the GDP per capita (fig. no. 2), it does not have the same dynamics with passenger traffic as in the case of GDP, but this indicator is one of the main criteria of LCCs when choosing their markets. Emerging countries are preferred destinations of ultra LCCs.

Economists state that 1% of GDP growth represents 1.5% points of air traffic growth (Delon, 2017). It is not the case in CEE. Although the evolution of GDP has displayed the same trends

as the evolution of passenger and cargo traffic, generating further airport development, during the last 12 years, under the influence of the global financial crisis, we note that the usual relation between GDP growth and passenger traffic performance (Table 1) has changed in some countries.

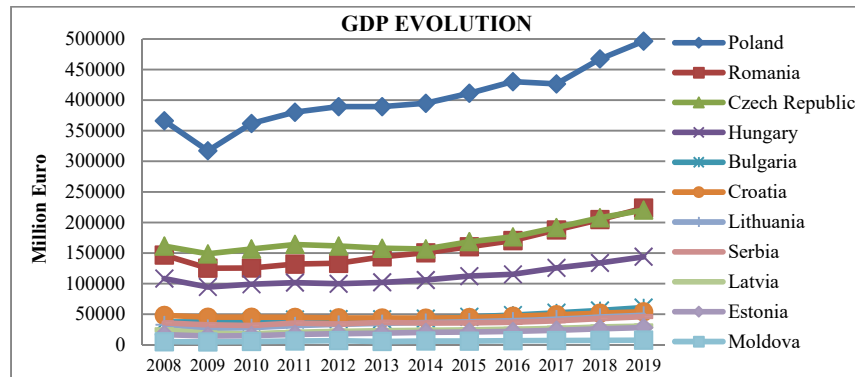


Fig. no. 1 GDP evolution in Eastern and Central Europe

Source: based on data from Eurostat, 2019.
'Real GDP growth rate – volume', Eurostat, 2020

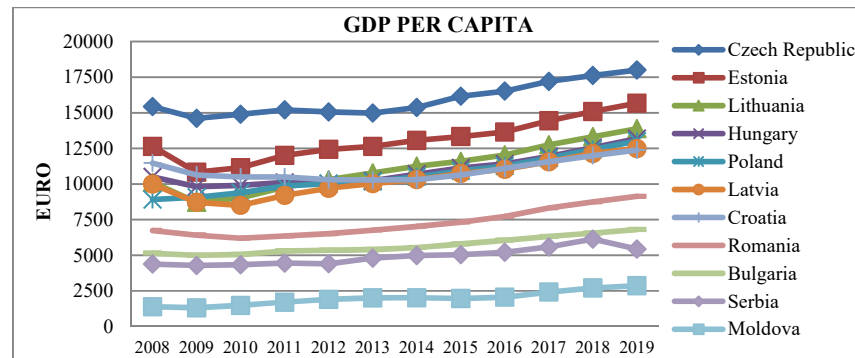


Fig. no. 2 GDP per capita

Source: based on data from Eurostat, 2020, Eurostat, 2020

From EU countries, the highest passenger traffic growth was recorded by Lithuania, followed, by Romania and then by Poland (fig. no. 3). In the case of Romania, Poland and Lithuania, both GDP and passenger traffic had the same trend. However, there are differences between the dynamic of GDP and those of passenger traffic. Although at the European level, GDP and passenger traffic have an increasing trend, we note a proportion gap between the dynamics of GDP and of passenger traffic during 2008-2019 in the analyzed region, mainly in Croatia, Serbia and the Republic of Moldova. For example, although the GDP of Serbia grew only by 24% between 2008 and 2019, the passenger traffic increased by 518% in the same period. This important increase could be one of the results of the strategic partnership from 2013, between Air Serbia and Etihad that acquired 49% stake in Air Serbia (Jat Airways) and management rights for a period of 5 years together with the policy of Nikola Tesla Airport of Belgrade on developing airport connectivity, but also the consequence of important emigration of work force.

This new relation between GDP and passenger traffic could be the reflection of the new market dynamics, changing consumer behaviors and increased importance of air transport in the European economy. The main reason for this weak correlation could be the important

workforce migration from Eastern Europe to Western Europe which have created the premises for an important development of LCCs and furthermore have turned air transport into a more popular means of transportation, using adequate marketing strategies.

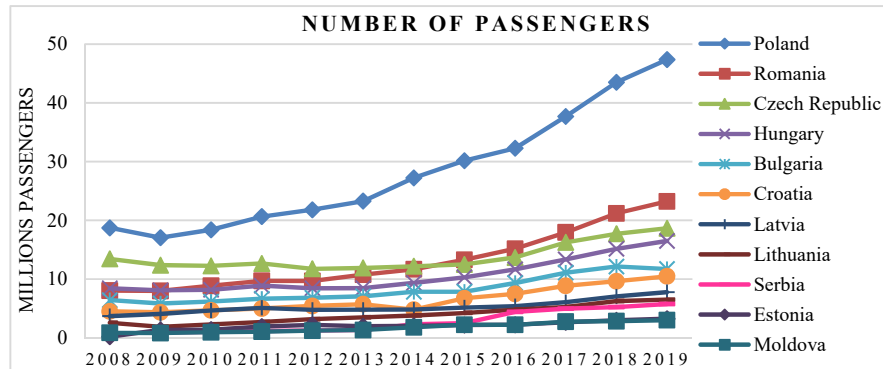


Fig. no. 3 Passenger traffic evolution in the analyzed countries

Source: based on data from Eurostat, 2020, Eurostat, 2020

In all countries, important investments in airport infrastructure is a common characteristic of air transport policy. By building new terminals and modernizing airport movement areas, airports have created optimal conditions for a larger number of aircraft movements on peak hours and better passenger comfort. In the case of Poland, the important investments in airport modernization with significant use of EC funds were combined with a coherent policy of LOT and Wizz Air. As a result, Warsaw airport is becoming a hub for European and Asian destinations. In Romania, important investments were made in airport infrastructure development; while the national airline Tarom does not have a coherent strategy for the efficient use of such developments, the LCCs: Wizz Air, Ryanair and Blue Air took full advantage of it. Simultaneously, increased airport connectivity brings important economic benefits due to its impact on the long-term performance of the economy by enhancing the overall level of productivity. The evolution of airport connectivity in the region is an important opportunity and a real magnet for the localization of multinational companies.

An important driver for the air transport in the region is the size of the market and the foreign investments made according to the criteria: economic potential of the region and airport infrastructure. The investments of Etihad which acquired in 2013 49% stake in Jat Airways and management rights for a period of 5 years contributing to the development of Air Serbia and consequently to the passenger traffic increase and a better airport connectivity. Another beneficial change in the region, as a result of foreign investments, is the privatization of Zagreb Airport which was given to ZAIC Consortium (Zagreb Airport International Company), for a 30-year concession under the terms of a contract signed with the Government of Croatia. The main actor of the consortium is ADP, and the contract includes financing, design and construction of a new passenger terminal.

Aviation is indispensable for tourism, being a major driver for its development, particularly in economies where the other means of transportation are less developed. Globally, from 2014, more than half of international tourists (i.e. 54%) travel by air (Pappas et al., 2016). On the other hand, tourist destinations contribute to the increase of air transport passenger rates. A relevant example in the region is Croatia, where the tourist interest in summer destinations determines seasonal air traffic in this country. In Dubrovnik, for example, the monthly average traffic in summer is 20 times higher than for the winter period.

Correlation between airport connectivity and passenger traffic

The evolution of passenger traffic for capitals' airports during 2008-2019 (fig. no. 4) may be divided by two periods according to the evolution trend: 2008-2010 a period of decrease and instability and, after 2010, a period of modernization and consolidation with accelerated growth for the majority of airports. The correlation between passenger traffic and total airport connectivity (fig. no. 5) is proven by the ranking of capital city airports in 2019 which is approximately the same as when using the passenger traffic criterion.

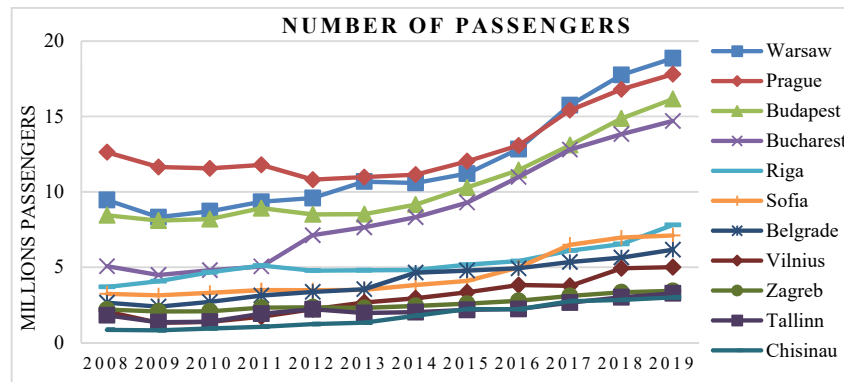


Fig. no. 4 Passenger traffic for capitals' airports (2008-2019)

Source: based on data from ACI Europe, 2019, ACI 2019

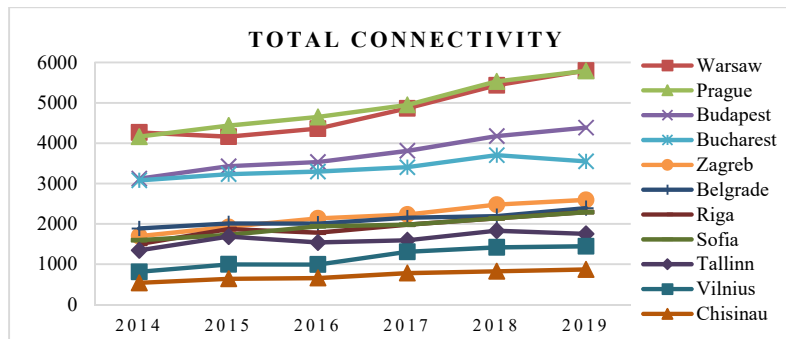


Fig. no. 5 Total connectivity by capitals' airports (2014-2019)

Source: based on data from ACI Europe, 2019, ACI 2019

Good connectivity leads to increased productivity by fostering investments and innovation, improvement of business operations and a new labor market strategy, enabling companies to attract high quality employees from a larger labor market and to operate on a larger economic market. The consequence is a more favorable environment for foreign investments, often leading to more conducive global business environment. Better connectivity together with a bigger number of seats offered, are a catalyst for the development of national, regional and global economy. The values of airport connectivity provide a qualitative and quantitative indication of how an airport links to the rest of the world. The connectivity is measured by a dimensionless coefficient, using NetScan model (ACI, 2015). Airport connectivity is very sensitive to the evolution of dominant airlines. The case of Budapest airport stresses the effect caused by the disappearance of the dominant airline Malev, which led to an important decrease in connectivity and passenger traffic in 2013- 2014. Since 2015, the development of LCCs Wizz Air and Ryanair which operated 74 destinations using high capacity aircrafts, has

led to an important increase in total connectivity and in passenger traffic (Zaharia, 2016). In Hungary, 99.3% of the traffic is concentrated in the Budapest Airport.

In terms of aircraft movements (fig. no. 6), after 2010, Warsaw, Bucharest, Riga and Chisinau have had continuous increasing values, Sofia, Talin and Zagreb have maintained approximately the same values. Prague and Budapest, between 2012-2016, have had an important tendency to decrease the number of aircraft movements followed by an increase after 2016 without reaching the value of 2008. These variations, correlated with the increased number of passengers and with better connectivity, indicate that the policy of airlines operating in these airports is to use aircrafts with higher capacity, having in parallel a good load factor (higher than 90%), as is the situation of LCCs. For LC, the average load factor is in general between 75% and 78.8% (Goldstein, 2018).

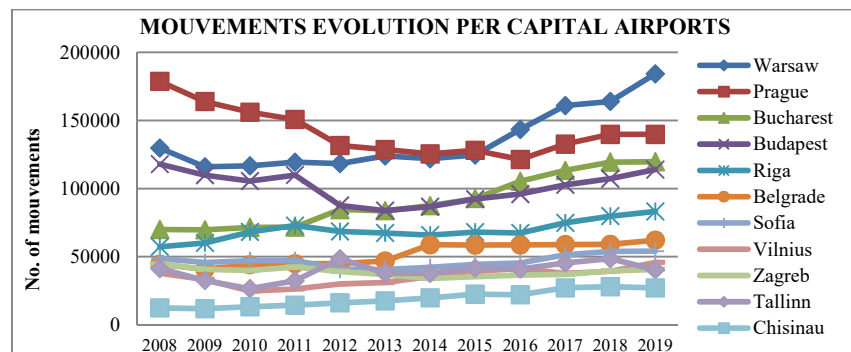


Fig. no. 6 Dynamics of aircraft movements in capital city airports (2008-2019)

Source: based on data from ACI Europe, 2019, ACI 2019

In Table no. 1, we present the synthesis of the correlation between economic context and air transport development using as indicators the number of passenger reported to the population, and airport connectivity reported to 100000 inhabitants. These data could give information of the life level and air transport development. We can observe that the leader from an economic point of view is the Czech Republic with the higher GDP/capita; and from air transport development, the Baltic countries Latvia and Estonia are better situated. Estonia is from all points of view: GDP/capita, passengers/inhabitant number and airport connectivity in the first three ranked countries.

Table no. 1 Correlation between GDP, connectivity and passenger traffic by number of inhabitants on the 11 major airports

Cuntry	Capital (Airport)	GDP per capita 2019	Traffic Pax 2019	Total Connectivity 2019	Pax/ Inhabitants 2019	Total Connectivity / 100 000 inhabitants
Poland	Warsaw Chopin	13 010	47 358 549	10,780	1,23	27,9
Romania	Henri Coanda, Aurel Vlaicu	9 130	23 237 241	4,944	1,20	25,5
Czech Republic	Václav Havel Prague	18 000	18 646 160	5,909	1,74	55,3
Hungary	Budapest	13 180	16 485 684	4,385	1,70	45,3
Bulgaria	Sofia	6 800	11 710 622	3,045	1,67	43,5
Croatia	Franjo Tudman	12 380	10 458 272	5,316	2,53	128,7
Latvia	Riga	12 490	7 770 445	2,292	4,08	120,2
Lithuania	Vilnius	13 880	6 503 486	1,160	2,36	42,1
Serbia	Belgrade Nikola Tesla	5 430	5 753 517	2,390	0,66	27,3
Estonia	Tallinn	15 670	3 245 244	1,751	2,45	132,1
Moldova	Chisinau	2 856	2 996 486	869	0,74	21,5

Source: based on data from Eurostat, 2019, Eurostat, 2020 and ACI, 2019

Conclusions

Traffic growth in the region is due especially to the LCCs which have modified the air transport market and the competition between airports for attracting new airlines and opening new routes. The network expansion of LCCs routes will continue to add new destinations and more frequencies, with the intention to tackle long hauls routes as well. These LCCs development strategies began to change the geography of routes leading already to the increase of traffic on regional airports to the detriment of hub airports. The EU enlargement and the EU regional policy also contributed to this.

Although there are systemic social and economic differences and the demand for transport is different in each country, the air transport market has many similar characteristics in the region: the demand is growing fast; the population has small or medium purchasing power; there is a mix of private and government-owned airlines and airports; airports are professionally managed; markets are competitive. Airports and some airlines are profitable and this is related to the growth of the local market, to the beginning of its maturity and to improved government policies. The outcomes of this market transformation are: lower prices, improved efficiency and profitability resulted from the price-cost dynamics.

The direct intercontinental airport connectivity is not enough developed and there is no important hub in the region. In the forthcoming period, a priority of CEE countries should be to improve intercontinental connectivity. Due to its strategic geographical position, Bucharest Airport, already a hub for the Sky Team Alliance could turn into a more important hub with opportunities for routes towards Asia and Africa.

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SOCIAL MEDIA AS A TOOL FOR INCREASING BUSINESS COMPETITIVENESS

**Răzvan Dina¹, Lelia Voinea², Dorin Vicențiu Popescu³
and Teodor Mihai Negrea⁴**

1) 2) 3) 4) The Bucharest University of Economic Studies, Romania

E-mail: rdina@ase.ro; E-mail: lelia.voinea@com.ase.ro

E-mail: dorin.popescu@com.ase.ro E-mail: teodor.negrea@com.ase.ro

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Abstract

Any economic activity is based on the relationship between two partners, the supplier of products and services and the one who purchases the products or services. For this relationship to be bi-unequivocal and the communication between the two partners to be as close as possible, we need some channels that will facilitate the transmission of messages between them as easily as possible. The social media is the one that allows a better transmission of the expectations, needs and opinions regarding the products and services offered by the business organizations. In order to make communication between companies more efficient to consumers through social media, it is necessary to develop a more efficient strategy. In order to verify how the tools offered by the social media are used I did a research on 320 people mainly students from the master and doctoral programs of the Academy of Studies. We wanted to identify whether the use of social media in business organizations is perceived as a more effective promotional tool than other types of tools.

Keywords

social media, influencers, audience, communication strategy, competitiveness.

JEL Classification

L21, L84, M1, M31

Introduction

In a competitive environment in which all aspects that contribute to achieving the objectives of a business organization and each actor that can influence its activity must be taken into account, social media can be the link between the different actors of the business activity. The social media not only has a role of communication channel between the different actors that constitute the business environment, but it can provide an image of the activity and needs of each of the actors involved in the economic process, allowing each of them to analyze and understand the needs and offers of others participating actors.

Social media allows the evaluation of consumers' expectations because by following the conversations they have about the products and services that a company offers (Zarrella, 2010). At the same time, the company presents itself in the online environment and through the tools specific to this environment. The value of the information found in the online environment can be evaluated mainly because of the influence it has on the company's image. An advantage of the social media is that the audience is alive, responds immediately to the message launched by business organizations, and further transmits it if they agree with it or criticize it if they do not like it. At the same time, one can easily identify the needs and expectations of those who are interested in the offer on the market. There are two types of audience to which and through which an organization can send its transmitted messages. This can be internal (own employees and shareholders) or external (consumers, investors, customers, distributors, suppliers).

In order to streamline the way the message is perceived by the audience, it is necessary to develop a coherent communication strategy.

For the implementation and elaboration of a general strategy, it is necessary to develop approaches at the level of the different departments involved. There are thus several levels how we reach this goal. Thus, there may be actions at the department level, or within a department, there may be strategies for certain activities of the department, so that in the end there are specific tactics for the implementation of the proposed goal (Maiorescu et. al., 2020).

Demographic data in determining consumer preferences

Consumers can come from different backgrounds, can have different ages, higher or lower incomes, can be graduates of higher education or have just finished high school, all this information is important to deduce what consumers need, and then to we can determine how we communicate with them, what information they need to become customers of our organization.

Based on demographic data we can only deduce the needs of consumers and we can make a comparison with what we determined by studying the observed behavior, only based on this type of data we can confirm our assumptions deduced by evaluating demographic data. A solid conclusion can only be given by corroborating both types of information (Petouhoff, 2012).

On the other hand, demographic data are not very helpful in determining consumer preferences. For this we need to make direct observation and take over our information using business analysis and data mining tools.

Identifying potential influencers

The most valuable consumers for the success of a social media campaign are those who are part of the "hard core", those who manage to influence the buying behavior of others. These are the people who by their opinions can easily convince others that their opinion is the right one (Melnik, 2011). Such people are very valuable to organizations, they can become promoters of the organization.

The duty of those responsible for studying and evaluating user behavior and building their profile is to identify these people and to bring them closer to the organization and to involve them in the promotion activities.

A starting point in the process of identifying these people is the information that they belong to certain associations, non-governmental organizations, non-profit societies, knowing that belonging to such groups can demonstrate communication skills and good organizers (Dumitru et al., 2014).

Another category of people who can be promoters and influencers for organizations are those who are active on blogs, frequently produce and post audio and video material

Development of the concept of communication

Based on the established audience and the values that the organization has, it is possible to define the concepts on the basis of which the products or services offered by the organization can be promoted (Kwayu et al., 2018). In the process of developing the concept, it is necessary to use all those elements that have defined the brand or product to be promoted, we must also take into account all the social media channels that we have used and adapt to the different ones. audiences we have determined (Zarella, 2010).

The steps to be taken in developing the concept are:

1. Establish our concept and audience
2. Let's turn the concept into a statement, into a motto
3. Testing and validating the concept

In the first instance, we need to determine whether we want to promote, the organization as an entity or we want to promote a product or service that we sell. Then we must determine those traits that characterize what we want to promote, to investigate how the organization, product or service is viewed by consumers, by those we want to address.

It is necessary to determine how we differentiate ourselves from the other competitors in the market, to find those elements that define us, to see what consumers want to know about us in order to answer them as accurately as possible.

Once we determine these elements and define our concept, the way in which we will present what we want to promote will need to conceive the message we will convey.

The consumer groups we are addressing may have different views on what we are promoting, so we will need to have different approaches about how we transmit it to each of these groups. Social media, through the different platforms and tools it offers us, allows us to address each group differently. Of course, the main information must be the same, but the address and the ways in which we send what we want to communicate may be different (Onete et al., 2010).

The message must be one that will address all categories of consumers, make them become active in the online environment we are addressing, incite them and come up with ideas, comments, happenings related to the products or services they are about. discuss, whether they are our organization or competitors. Thus, we will be able to find useful information about ourselves and about competition, information that will help us improve our products and services, develop new ones and have a good relationship with our consumers.

Finally, before launching the concept, we will have to test whether we have a well-realized concept and whether it is appropriate to launch it now or we will have to wait longer.

Once it has been established what message is to be transmitted, organizations, based on existing information, already transmitted by the organization in the past at the same time transmitted by others, customers or opinion formers, through the various communication channels used, whether offline or online, and about the products and services offered they must select that information which would best suit what we wish to convey and at the same time encourage those who receive it to respond to it.

Competition assessment

At any time the presence in the social media, whether it is the implementation of a concept, the development of a promotional activity or the process of communication with consumers, must not be overlooked by the activity of the other competitors.

The actions that competitors take must be continuously studied and followed in order to have a fast and concrete response, always knowing that social media is a very dynamic environment, in which the reactions must be fast, but at the same time well thought out. That is why organizations need to find those advantages, those key elements that differentiate them from their competitors (Petouhoff, 2012).

The way in which the organizations through which they study their competitors and place themselves in relation to them in the activity in the social media differs the classical vision. When activating in social media, organizations must look at their competitors from the perspective of consumers, they must analyze how the activity of competitors is viewed by those who comment and analyze their responses on social media platforms.

At the same time, the analysis must be done taking into account all the categories of consumers that have been highlighted in the process of developing consumer prototypes, at this stage of the implementation of the model, the prototypes obtained through the reporting of competitors can be re-analyzed.

Once these new prototypes are obtained, if it is found that significant changes have occurred, the previously elaborated concept can be reconsidered to fit the new consumer profiles.

In analyzing the activity of the competitors in the social media it will start from identifying those competitors who are active in this ecosystem, will identify the tools and platforms that they use, will be established for each of the competitors which of these platforms are most used, in order to finally make a comparison with the platforms used by our organization.

A second element that must be taken into account when analyzing the activity of the competitors is the quality of their activity, by this will evaluate the content, the opinion of the consumers about their posts, the comments and reviews of the online community in which they are present, the level of involvement in social media and on the platforms it activates.

After this analysis has been made, and after all the conclusions drawn from this analysis have been drawn, re-analyzing all the elements that make up the plan of establishing a strong online community around our organization, we can proceed to the execution, implementation phase itself.

The specific objectives of the departments of a business organization in relation to the social media.

Methodology

We wanted to identify whether the use of social media in business organizations is perceived as a more effective promotion tool than other types of tools used to date.

The researched collectivity was, out of 320 people, mainly students from the master and doctoral programs of the Academy of Studies, because I started from the premise that they have already found a job and have an image formed on the activity from -a company and at the same time being young people are familiar with the applications offered by the social media. The sex distribution being 67.72% women and 32.28% being men.

The observation unit was represented by the members of the business organizations that communicate through social media, communication that is addressed to both customers, business partners and employees. The polling unit is represented by a member of the organization that holds a management or execution function.

The management of the organization

We wanted to analyze how social media tools and platforms can influence and improve the business activity of a business organization, we wanted to find out how respondents appreciate the relationship between social media and the goals of each department.

For the good management of the organization we wanted to find out the opinion of those questioned in relation to the following main objectives:

- Brainstorming
- Brainwriting
- Evaluation of the factors that influence the processes of the company's activity
- Obtaining information on the aspects that constitute the activity of the company
- Rational loading of the job and achieving the agreement between the job requirements and the qualities of the staff

- Determining the level of load with tasks of the personnel
 - Making the correspondence between job requirements and staff qualities
- The results of those questioned are presented in Figure 1.



Fig. no. 1 The objectives pursued by the management of the organization by using social media tools

Source: original, based on research data

Results

Obtaining information on the aspects that constitute the activity of the company is considered the most important objective that can be achieved by using the tools and platforms offered by the social media. This result can show that the respondents consider that through the social media the activity of the company can be monitored very well and at the same time the activities and reactions of the competitors can be evaluated in relation to the decisions taken by the management of the company.

Those who considered that the evaluation of the factors that influence the processes of the activity of the company can be done through social media is close to those who considered that information can be obtained on the aspects that constitute the activity of the company using social media, which makes the results to be confirmed each other, because the evaluation of the factors that influence the activity of the company can only be by obtaining accurate and complete information about all the aspects that constitute the activity of the company. Social media offering a multitude of tools through which such analysis can be performed.

Although brainstorming and brainwriting use similar techniques to obtain new ideas or solve problems through a collective assessment, the two objectives have achieved completely different results. What is even more surprising is that brainwriting can be more easily used through social media because it is based on discussing and evaluating ideas that are written by those involved in the decision-making process. This result can be explained by the fact that

this method is less known than brainstorming. The realization of the correspondence between the job requirements and the qualities of the staff was considered by only 18.11% of the respondents as achievable through social media. This result can be regarded as a normal one, given that through the feedback received from consumers the activities of some departments can be evaluated, rather than of persons working in one department or another. However, there are companies, such as those dealing with sales, that can more easily evaluate the activity of each individual.

Also in accordance with the activity of the staff can be seen also the objective that refers to the determination of the level of loading with tasks of the personnel, which obtained a smaller percentage but close to that regarding the correspondence between the requirements of the job and the qualities of the staff, which shows that in the opinion of the respondents the tools offered by the social media are not very useful in the individual evaluation of the staff.

However, a quarter of those surveyed considered that the rational loading of the job and the matching of the job requirements and the qualities of the staff can be achieved through the tools and platforms of social media, which shows that the respondents believe that the employees can be monitored effectively, for example by the pursuit of the activity in the social networks, and thus to determine if they somehow have time to carry out other activities during the program. If we make an average of the number of answers given on each objective, we obtain a value of 33.15 (see Table no. 1), a value that may show, in the respondents' opinion, that social media is not very useful in achieving the specific objectives of the organization's management. , and yet if we look at it as a percentage it is much higher than the value obtained when evaluating the utility of social media according to the departments of the organization.

Table no. 1 Average answers on each department based on their objectives

Departament	Percentage
Management	33,12
Distribution / supply	51,12
Marketing	49,1
Commercial / sales	53,57
Production	55
HR	55,33
Financial	61
Service and after-sales service	48

Source: original, based on research data

Conclusion

Every organization has a brand behind it, a brand that it must and is trying to defend. One mistake some organizations make is that they are not aware of what the brand represents for their consumers. There is that difference between what the organization considers to be its brand and what the consumer feels that it represents. It is known that what people say, in this case consumers, about a brand can strengthen or destroy a business. That is why, before launching a social media campaign, organizations need to check what consumers are perceiving about their brand and bend to its expectations.

You need to be aware that the brand of an organization is owned by consumers and by its employees. Influence must be on everyone, both consumer opinion and actions of an organization's employees can raise or destroy a brand. Thus, an organization needs to be aware of this and convey the right message that will appeal to them and make consumers aware of the value of their brand and its employees (Lu, et al., 2019).

That is why it is very important to establish from the beginning a correct strategy, and to be continuously connected to the activity of the community we have set up, so that we can adapt ourselves to its needs at any time and be able to respond as quickly as possible and face the threats occurred.

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PHYSICIANS' MIGRATION FROM ROMANIA. RECENT EVIDENCE FROM ADMINISTRATIVE DATA

Simona-Andreea Apostu¹, Monica Roman² and Valentina Vasile³

¹⁾ *The Bucharest University of Economic Studies, Institute of National Economy, Romania*

²⁾ *The Bucharest University of Economic Studies, Romania*

³⁾ *Institute of National Economy, Romania*

E-mail: simona.apostu@csie.ase.ro; E-mail: monica.roman@csie.ase.ro

E-mail: valentinavasile2009@gmail.com

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Abstract

A major component of brain drain from Romania is physicians' migration which has significant social consequences, both for origin and host countries. In 2010 over 10 thousand doctors worked only in OECD countries out of 156818 of doctors. The objective of this paper is to describe the recent migration of the physicians from Romania and the main push factors. It is found that: (i) physicians' migration from Romania is determined by remuneration, working conditions and living conditions and (ii) only the increase of wages, up to 2-3 times, without being associated with investments in technology and in the working conditions of hospitals does not fundamentally change the trend of external mobility for work, but only flattens it temporarily.

Keywords

International migration, medical brain drain, Romania, Principal Components Analysis

JEL Classification

C38, F22, R23

Introduction

Today, migration is a "top-tier political issue" (WMR, 2020) and is mainly related to global development, technological, economic and social transformation. 3,5% of the total population are migrants; 2/3 of the 271,6 million are labour migrants (UN DESA, 2019). The migrants' stock from Romania was of 3.57 million people in 2019. The 2017 data from the National Institute of Statistics (NIS) indicate that out of the total stock of migrants over 2/3 there are migrant workers for a period of more than 1 year, with residence in Romania, respectively that 12% of the total population. Most are 25-39 years old (almost 25% of the population in

this age group works abroad) and the average level of training has increased steadily*. Among the skilled migrants most represented in the last decades were the specialists from health, ITC and engineering (Goga and Ilie, 2017).

This research is focused on the analysis of the recent migration of the Romanian healthcare professionals. The hypothesis to be tested is that there is a link between the physicians' propensity to work abroad and some social and economic variables, as push factors. The added value of the research starts from using the administrative database on the professional certificates granted to doctors, as a measure of the propensity for migration; also, new evidence is produced by associating the dynamics of the number of certificates with a series of indicators that reflect the major problems that Romania faces, respectively: a) the number of emigrants (total and at regional level, on counties, to highlight the trend and geography of population loss), b) number of late fetal deaths (as a qualitative measure of the efficiency of the health system, the death rate in Romania being among the highest in Europe); c) the number of hospital beds, as a global indicator of the development of medical services in the hospital system; d) the average wage earning in health and social work activities, which highlights the level of economic development and quality of life and e) the unemployment rate, by which the pressure of the labor market can be measured. The principal components analysis (PCA) was used for identifying the regional factors are associated with doctors' migration.

The paper is of high significance for health policy makers, as the loss of human resources in the health sector for sending countries implies that the health system's ability to provide healthcare is significantly reduced. In the last decade, the migration of health specialists has been represented both by experienced doctors, residents and medical students, and nurses. In this way, the health system is affected, quantitatively and qualitatively, from several perspectives: a) increasing the deficit of employment in the health sector, and reducing the share of experts with experience, through the migration of doctors already employed; b) reducing the potential for rejuvenation of employment and increasing the level of current knowledge, the capacity for innovation and professional excellence through the migration of residents; c) reducing the supply of employment in health services by drastically reducing the number of students in medicine, pharmacy, etc. who wish to remain after graduation in the country of origin.

Literature review

The main reason for physicians' migration differs according to the countries of origin, but the common denominator is the desire to have better working conditions and high-tech equipment, alongside with income. For instance, Hussey (2007) analyzed international physician migration to the United States from all other countries to identify the factors that influence this phenomenon. The results showed that physicians' migration was influenced by GDP per capita in an U-inverse model, most people migrated from countries with middle-income. Other variables that influenced physicians' migration were: absence of medical schools, US migrant networks, English medical instruction, proximity to the United States, and lack of political and civil liberties.

The "brain drain" in the healthcare field has a negative impact on medical services. Kaushik et al. (2008) examined the link between quality of medical education of medical graduates in India and the rate of migration to the United States and the United Kingdom between 1955 and 2002. The share of medical graduates who migrated to the United States and the United Kingdom were calculated based on rankings medical colleges and universities according to three indicators of quality regarding medical education: student choice, academic publications and availability of training medical specialists. The results showed that graduates of medical

* <https://monitorsocial.ro/indicator/situatia-populatiei-plecate-din-romania/>

colleges and universities in the top 5 were 2 to 4 times more likely to migrate to the United States and the United Kingdom than graduates from other colleges and universities. Graduates of higher quality medical institutions are more likely to migrate, so interventions to prevent medical migration should focus on graduates of high-quality institutions. An analysis by Vujicic et al. (2004) showed that wage differences between the countries of origin and the countries of destination are the main factor affecting migration. Other factors, such as working conditions and professional development, had a significant influence on the decision to migrate. The same is true for physicians from Romania - the significant wage disparities attracts health system workers in the countries of destination (Stilwell et al., 2004). Using OECD data, Botezat and Ramos (2020) analyzed the mobility of physicians from several regions around the world and indicated that individuals reacted differently depending the country of origin. The results showed that the factors that significantly influence the medical brain drain are: dyadic factors, lower unemployment rate, physicians' good remuneration, aging population and medical infrastructure in the host country. The Romanian case is not enough covered by the existing literature, mainly due to the lack of reliable data. Relying on a large survey data, Roman and Goschin (2015) identified different triggers for working abroad and returning in the case of medical doctors and nurses. Also Boboc, Boncea and Manea (2015) used panel data analysis for identifying the macro factors that influence the medical brain drain from Romania. Their results show that expenditures in health sector played an important role.

Methodology

The administrative data used in this research originates from the Romanian College of Physicians (RCP), and NIS. The number of doctors having the intentions to work abroad is measured by number of professional certificate released by the RCP. We work under the assumption that a doctor applying for a Current Professional Certificates from the RCP, in the short and medium term, will emigrate for working abroad. The Current Professional Certificate is the document issued at physician request or at the request of the competent authority of another state and contains the relevant personal data regarding the honorability, morality and competence of the physician who holds or has previously held the status of a profession, according to the RCP. The indicator is reported monthly.

In the first step a descriptive analysis was conducted for understanding the dynamics and regional distribution of the medical doctors who intend to work abroad. In the second step, PCA conducted for 2016 and 2018 reveals the factors associated with this movement.

Results

According to the data provided by the RCP, the number of physicians increased significantly after Romania's accession to the EU, and from 2010 decreased, excepting a slight fluctuation around 2015 (Figure 1).

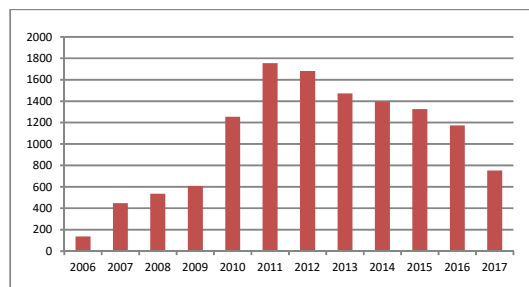


Fig. no. 1 The number of migrant physicians from Romania, 2006-2017

Source: Authors' computation using RCP data

A territorial analysis of the migrant physicians from Romania pointed out that most physicians requested Current Professional Certificates in big university centers. The cities from where most physicians intended to migrate in 2018 were: Bucharest, Timiș, Iași, Dolj and Cluj (Figure 2), areas that concentrate university centers with academic training in the medical field recognized abroad.



Fig. no. 2 Physicians' migration by counties, from 2018

Source: Authors' computation using GeoDa and RCP data

If we report the Current Professional Certificates to the physicians existing in that counties, in 2016 Timiș ranked 1st place (10.13%), followed by Sibiu (6.35%), Bucharest (6.25%), and Iași (5.68%). The share of Current Professional Certificates in total physicians decreased in 2018 compared to 2016, an explanation might be the wage increases in Romania, in 2016 and another significant special increase for specialists in health sector in 2018. The wage base increase was as least with 70%, higher for residents and young physicians (Law 153/2017). In 2016, the main destination countries were France, UK, Germany, Ireland, Belgium and Sweden, and the hierarchy was maintained in 2018, but the absolute values decreased considerably (Figure 1).

Previous studies have shown that the financial factor had the biggest influence on Romanians decision to migrate, so we considered the same hypothesis in the case of physicians. The analysis included variables that characterize the standard of living (average income in health and social work activities, number of migrants from Romania and unemployment rate) and variables describing the working conditions of the physicians (number of hospital beds and number of late foetal deaths).

The PCA was performed for 2016 and 2018 (Figure3). In 2016, the projection of data on the first two principal components preserves 85,27% of the total inertia (65,48% for the first axis, 19,79% for the second axis), while in 2018 the projection of data on the first two principal components preserves 86,14% of the total inertia (73,24% for the first axis, 12,9% for the second axis).

The quality of the results is assessed by Kaiser-Meyer-Olkin Measure of Sampling Adequacy (0,728 for 2016 and 0,731 for 2018) and by the Bartlett's Test of Sphericity (p-value 0 in 2016 and 2018).

Both in 2016 and 2018, the link between the number of CPC, average income in health and social work activities, number of migrants from Romania, number of beds and number of late foetal deaths is direct, and the link between number of migrant physicians from Romania and unemployment rate is inverse. Comparing the two years, it is noticed a stronger correlation between CPC and income in health and social work activities in 2018 than in 2016. This can

be explained by the minimum wage increase in 2016 and the increase of doctors and nurses salaries in 2018. At the same time, the association is bigger between income in health and social activities and the number of CPCs in 2018, which may reflect a decreased influence of income on physicians' decision to migrate.

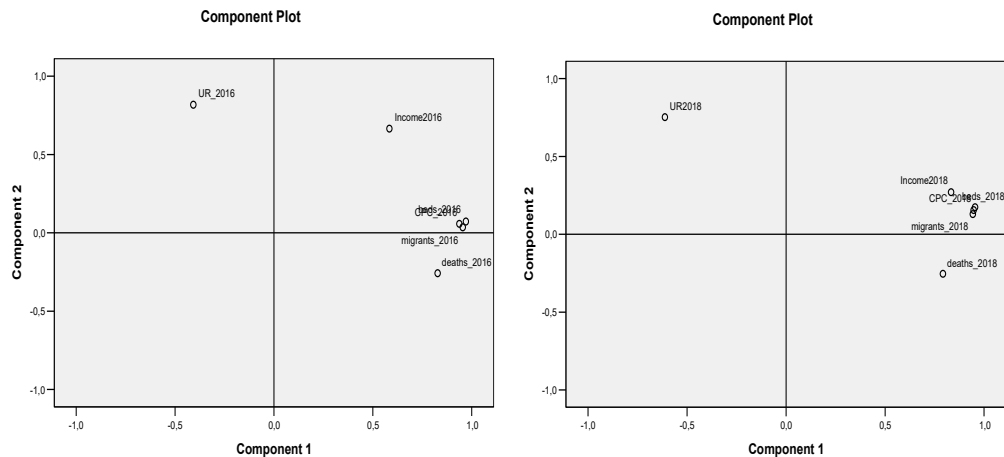


Fig. no. 3 PCA of migrant physicians from Romania, 2016 and 2018

Source: Authors' computations

Even though the physicians' wages increased in 2016 and 2018, the factors that influenced Romanian physicians' decision to migrate remained the same: the standard of living and working conditions, but the influence of the average income in health and social work activities decreased. The wages, although substantially increased, are still several times lower compared to those of the developed countries of the European Union and do not compensate for the negative externalities generated by the former two push factors mentioned above.

Conclusions

Both the accessibility of health services and health services quality are significantly influenced by physicians' migration in Romania. Analyzing this phenomenon in Romania, it was identified that during the last three years, the physicians who requested Current Professional Certificate in order to migrate from Romania decreased, one reason might be the salaries increase in 2016 and 2018.

The counties where most physicians requested Current Professional Certificate were: Bucharest, Iasi, Timis and Cluj, four big counties with big university centers. Also, according to administrative data, most preferred destinations for Romania physicians are: France, UK, Germany, Ireland, Belgium and Sweden. Analyzing the factors correlated to physicians' migration, the results identified a direct association between Current Professional Certificates, average income in health and social work activities, number of emigrants, number of hospital beds and number of late foetal deaths; there is an inverse correlation between Current Professional Certificates and unemployment rate. This suggests that physicians' migration is determined mostly by factors that reflect working and living conditions. Wages, as a migration push factor, decreased in intensity after substantial salaries augmentation in healthcare sector in 2016 and then in 2018, but still remains as a complementary factor for external labour mobility.

The results from our descriptive analysis may be the starting point for further, detailed research. Applying for a professional certificate is a clear sign of an intention for working abroad and should be considered as a warning indicator for policies to support the

development of the medical system - from investment in equipment and infrastructure development, to wage policies based on performance and reward excellence in the medical act.

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SKILLS AND COMPETENCES PYRAMID V. STUDY PROGRAMS

Cristina Vasilica Icociu¹, Nicolae Postăvaru², Mihnea Costoiu³, Tiberiu G. Dobrescu⁴ and Cătălin Ionuț Silvestru⁵

^{1) 2) 3) 4)} Polytechnic University of Bucharest, Romania

⁵⁾ The Bucharest University of Economic Studies, Romania

E-mail: cvicociu@gmail.com; E-mail: nicolae.postavaru01@gmail.com;

E-mail: mihnea.costoiu@upb.ro; E-mail: tibidobrescu@gmail.com;

E-mail: catalin@ase.ro

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Abstract

The present paper follows the one presented in December, at the 2019 Vienna Education Conference, entitled: Competences between Labor Market and Higher Education through ESCO. That paper presented a correlation between the labor market and education using ISCO and ISCED taxonomic systems though ESCO and we came to a way of creating study programs with a common European base, leading to recognition of qualifications.

Now we move forward and we look for common skills for study programs. We are introducing a pyramid of skills starting from ISCO, a hierarchy and a new classification depending on how they are acquired: i) naturally, through DNA and social environment and ii) through education and learning. The main idea is that without a seed there are no flowers. Hence, another form of organization of skills and competences, a new scheme presented for the first time here. Finally, we come to a new systematization of skills known in literature and the creation of common disciplines for several study programs, without discussing professional disciplines. This step can lead to the partial recognition of a qualification, about 30-40%, especially since, in our opinion, these common disciplines should be compulsory at bachelor level.

Keywords

Skills, ISCO, ESCO, ISCED, qualification, recognition, study programs

JEL Classification

J24, I 23, C38

Introduction

This paper is a continuation of the article „Competences between Labor Market and Higher Education through ESCO”, presented at Vienna Education Conference, in December 2019, where let’s remember we discussed about ISCO and ISCED being two similar taxonomic

systems, with five levels or occupational groups/ fields of education. Both standards are recognized and used in Europe. We said and agreed that to one or more tasks characterizing an ISCO level has to correspond a competence acquired in the education system through learning outcomes. Thus, we can create a classification/ hierarchy of skills and competences into ESCO (European Commission – ESCO), similar to that of the ISCO groups (ILO 2008). Since ESCO comprises these competences, they must be identified and systematized by level the same way as ISCO (fig. no. 1).

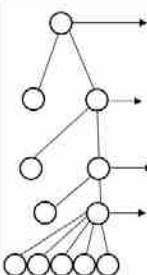
ISCO – Taxonomic system	Classification/ hierarchy ISCO	Tasks ISCO	Hierachic competences	Hierarchy Skills ESCO
	Major group	General	EQF level skills	EQF level related
	Sub-major group	Basic	Basic	Basic
	Minor group	Fundamental	Fundamental	Fundamental
	Unit group	Field related	Field related	Field related
	Occupations	Occupational	Professional – specialized and specific	Specific

Fig. no. 1 ISCO-ESCO a common hierarchy

Source: Costoiu M, Dobrescu T.G., Icoiu C.V., Ion V., Postavaru N., Silvestru C.I., 2020, *Modernizarea sistemului de învățământ superior tehnic în contextul globalizării*, Bucharest: Matrixrom

The hypothesis is this: a task has corresponding competences and skills, either professional, or personal/transversal/ key for all five levels.

The skills and competences pyramid resulted, in figure no. 2 – competence pyramid made up of five levels, following the ISCO taxonomy, which is at the basis of the reasoning of this paper. Thus, by combining the skills and competences: key, transversal, including (personal) with the professional ones (workplace, general, and professional) we have created a competence pyramid generalized for all ISCED fields (see figure no. 2).

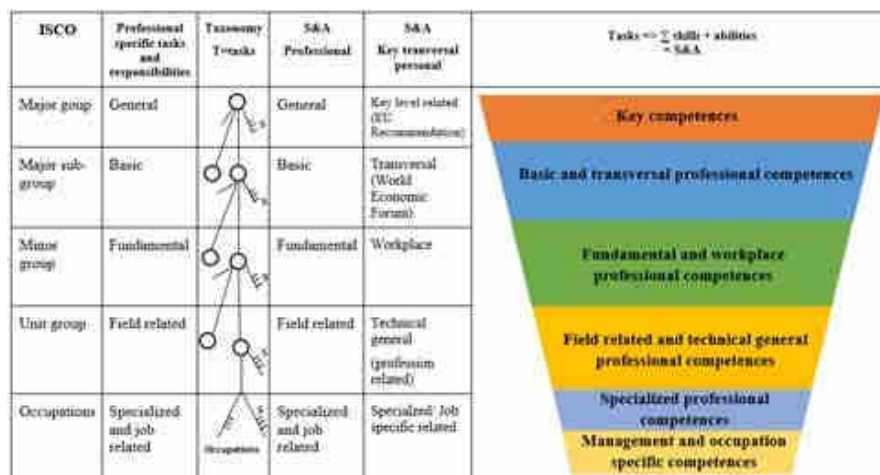


Fig. no. 2 Competence pyramid

Source: Costoiu M, Dobrescu T.G., Icoiu C.V., Ion V., Postavaru N., Silvestru C.I., 2020, *Modernizarea sistemului de învățământ superior tehnic în contextul globalizării*, Bucharest: Matrixrom

The relations in Figure no. 2 were based on are the following:

- Skills/ competences = Learning outcomes
- Study programs = Learning outcomes -> Disciplines > Credits -> Curriculum -> Teaching -> Evaluation -> Validation -> Certification -> Qualification
- Qualification = completing a study program and acquiring the learning outcomes in accordance to standards

Going further, these competences generate learning outcomes organized in a similar five-level structure, based on which we have disciplines that shall characterize each ISCED field, thus resulting into a final curriculum or study program (see figure no. 3).

Competence	ISCED fields	Learning outcomes	Disciplines	Curriculum
general		general	general	All disciplines + Elements + Credits = Curriculum = Study programs
basic	broad	basic	basic	
fundamental	narrow	fundamental	fundamental	
field related	detailed	field related	field related	
specific	specializations	specific	specific	

Fig. no. 3 Labor market – education relation

Source: Costoiu M, Dobrescu T.G., Iocoiu C.V., Ion V., Postavaru N., Silvestru C.I., 2020, *Modernizarea sistemului de învățământ superior tehnic în contextul globalizării*, Bucharest: Matrixrom

At major group level ISCED has no correspondent, the logic of the hypothesis being: occupation -> tasks -> competences -> ISCED fields -> learning outcomes, which led to Figure no. 3.

Thus we created a pyramid of the way of designing study programs (figure no. 4), which we are proposing in this paper.

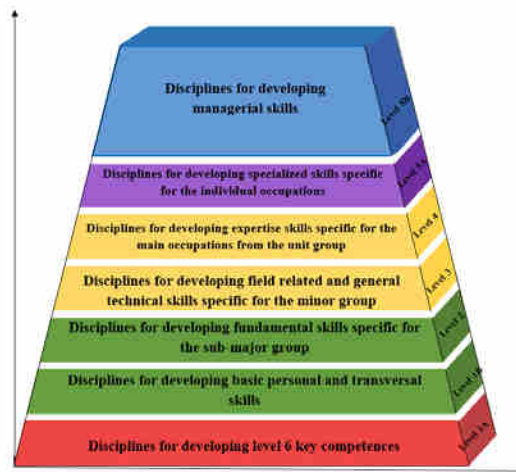


Fig. no. 4 Model for discipline pyramid for designing higher education study programs

Source: Costoiu M, Dobrescu T.G., Iocoiu C.V., Ion V., Postavaru N., Silvestru C.I., 2020, *Modernizarea sistemului de învățământ superior tehnic în contextul globalizării*, Bucharest: Matrixrom

Skills and competences– results of analysis and discussions

The synthesis of this way of thinking and organization is transposed in figure no. 5 in a common body of disciplines, general and professional (CB), which can be created at European

level for any ISCED field, based on ESCO competencies and an individual body (IB) of professional disciplines at national or university level.

The curriculum would consist of the sum of the two bodies: $CB + IB = C$.

The recognition would be greatly enriched and facilitated between qualifications obtained in different countries for the same ISCED field (UNESCO 2013) and the same specialization, because in this relationship CB would be the common part. Mobility would have only to gain at European level 100% eliminating many of the invisible, often bureaucratic barriers legally existing today.

In this paper we want to support the ideas presented above, and so we come to clarify what would be the general (key, transversal, personal) and basic competences that are part of the common body (CB), respectively those non-professional common disciplines that should exist at university level, so that 30-40% of the curriculum is similar from one university to another and from one field to another.

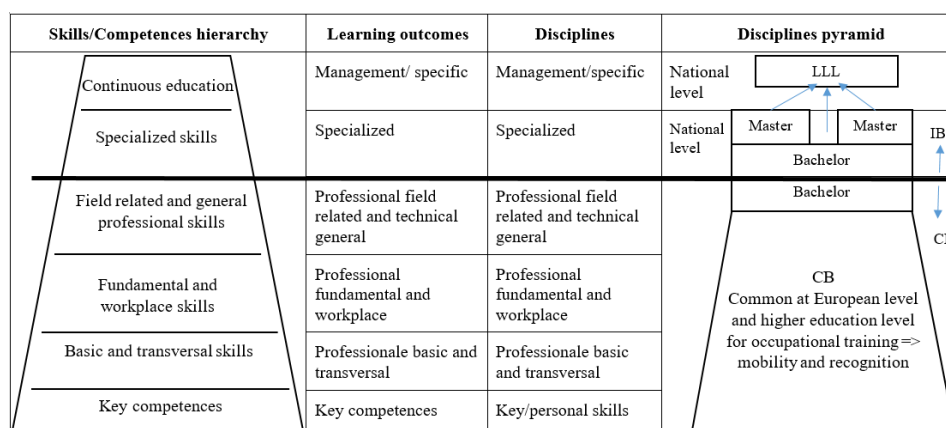


Fig. no. 5 Model for common body (CB) for disciplines

Source: Costoiu M, Dobrescu T.G., Iocciu C.V., Ion V., Postavaru N., Silvestru C.I., 2020. Modernizarea sistemului de învățământ superior tehnic în contextul globalizării, Bucharest: Matrixrom

Specialized literature was taken into account, which mentions that in future study programs transversal and key competences need to be better represented. This is a demand of the labor market in order to rapidly adapt the individual to the workplace and increase the efficiency of labor.

To this common body some of the professional competences will be added and will reach about 70% of the curriculum for bachelor level, which is common at European level and will facilitate even more the communication within the field of specialists, recognition between them and research in the field, respectively, which will focus on common themes, without affecting the university autonomy. As the labor market has understood the beneficial role of standardization, so must education understand the progress that such action entails.

For this purpose, we have looked into and considered the competences:

- Key, as per the Council Recommendation of 22 May 2018 on key competences for lifelong learning (European Council 2018)
- CEDEFOP
- World Economic Forum. (2016)
- OECD,
- American Association of Engineering Societies, AAES – Engineering Competency Model, 2015

Analyzing, selecting and assigning these competences by levels, according to figure no. 2, resulted into the detailed competences pyramid, which can be successfully applied in more ISCED fields (figure no.6).

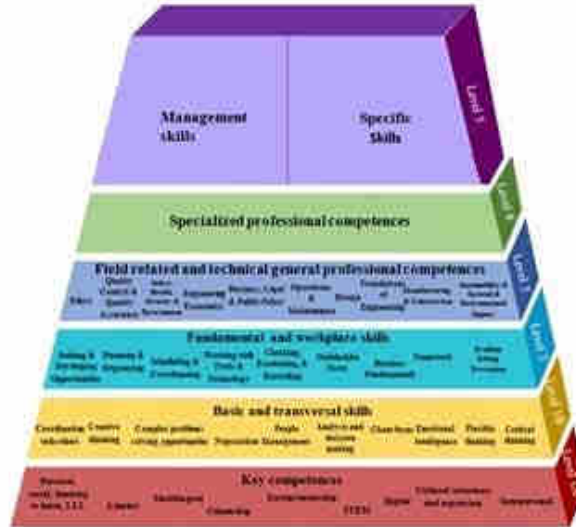


Fig. no. 6 Detailed competences pyramid (technical fields)

Source: Costoiu M, Dobrescu T.G., Iocoiu C.V., Ion V., Postavaru N., Silvestru C.I., 2020, *Modernizarea sistemului de învățământ superior tehnic în contextul globalizării*, Bucharest: Matrixrom

This is where the novelty of this paper begins, in the sense of distributing these competences to the different classifications created and then to some disciplines that should exist in university study programs.

First we made a new classification of competences (figure no. 7) by specialization, as in organizing them according to how they exist in the individual: naturally, up to the level of DNA, or acquired, in formal, informal or nonformal contexts.

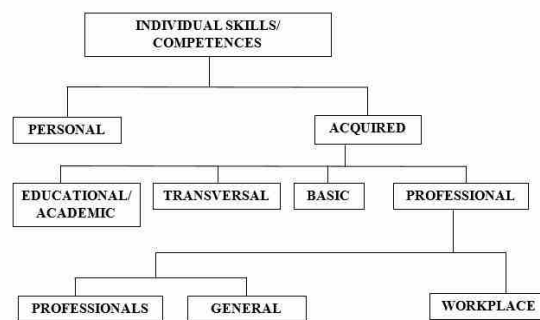


Fig. no. 7 Structure of skills and competences

Source: authors' own development as result of analyses

We started from the idea that if you have no musical ear, you cannot become Mozart, if you have no talent, you cannot become Picasso, or ..., if you do not have the seed of ability, you cannot develop it, and the work, the will, the desire can only replace the seed until a moment/level from which, further on, the talent given by the seed planted by nature speaks. There are countless examples around us.

The vast majority of us learn - we acquire, the school educates us this way. Maybe learning from what we do could be a new type of school, but we do not replace the great historical “constructions”.

What we gain / learn can only be realized and affirmed through experience. Experience shows us whether what we read has been turned into competences or not. Even the evaluation of learning outcomes does not compare with real life experience. Experience becomes a part of our training of special importance, an informal training system that over time, throughout the professional life becomes stronger than formal training, people who succeed in life learn from the experience of others and the personal one, but many do not learn from either personal experience or the experience of others and the results are seen.

It is precisely for this reason that the importance and necessity of transversal, key and personal competences has increased, they help the individual to acquire experience, sometimes more than formal training (except for research, design, special sectors).

The new classification of skills/ competences, by their nature of acquiring and origin, comprises two classes: **A) Personal** and **B) Acquired**.

Thus, class A comprises competences that have their seed in the individual, are acquired through personal experience, by informal and non-formal means, they depend on culture, race, traditions etc. and required when hiring, differentiating people in time. Among these, there are the following examples: learning to learn, lifelong learning (LLL) – capacity to acquire new and advanced skills, languages, STEM, digital competences, sensibility and cultural expression, people management, IQ, flexibility of thinking, Seeking and creating opportunities, autonomy, responsibility, reflection of thinking, prevention and decision-making. We can write a book about them, but it is not the subject of the present paper.

They have a transversal, interdisciplinary character and are developed and perfected through lifelong learning programs. They are or are not inside us, we have to search for them and discover them (the sooner the better), especially through experience, then we specialize in what we have discovered in us, if the case. For example, you do not know if you have the skills to manage people unless you try it, otherwise everyone thinks they have it. If you prove that you have the seed, you specialize in management, that is, theoretically (some owner of SMEs) along with the managerial sense and you can become a successful manager.

Many of these skills we consider key or transversal, yes it is true they can also be acquired, but at only those who have the seed can reach performance for either: the others, to learn, organization, foreign languages, responsibility, etc., but without proficiency performance.

Class B refers to external or acquired through education and learning in formal contexts especially, which means you learn what to do. It is what learning outcomes refer to. These are divided in: **B1**. Educational/Academic, **B2**. Transversal, **B3** Basic and **B4**. Professional.

B1. Education/Academic, are those that help us communicate and think in society, they are described in the Recommendation (European Council 2018):

B1 and **B2** must be taught in the university because depending on the level of qualification, there should be disciplines that develop them within the study programs. They are appreciated by employers when filling in a position for a job.

B3. Basic: these should be added to the ones described above as a package of necessary general scientific skills to understand the surrounding world, the environment and not to be credible in the face of fake news, due to ignorance. These skills are still found in Greek school and they comprise a basic package of knowledge and skills consisting of lectures in: Physics / Chemistry applied in the environment, mathematics applied in daily life, natural sciences, biology, astronomy, philosophy or science. social. They are a level 6 skills package that characterizes university education. Partially they must be followed because they are the base of social thinking and one needs to understand the world around.

B4. Professional, those that will help us at the workplace, in the craft, in the middle of specialists to understand each other and to understand them. These are divided into:

B4.1. Common at the workplace, respectively the ISCED field/ ISCO group the occupation belongs to. They are acquired with the fundamental professional competences.

B4.2. General technical skills, each field, be it engineering, medicine, social sciences or humanities, has a technical part of the profession common to all, which they practice. It is very useful for entrepreneurs and supports the choice of the company domain.

This should be identified and studied for accommodation in the workplace and profession, These skills do not give qualifications, they make us to be better assimilated into the work team, integrated into the society and at the workplace, to be able to collaborate with business partners. These have less to do with ESCO, especially with daily life, it is the past experience transferred to future members of civil or professional society. They are acquired together with the professional skills of the field that they characterize.

All these competences B4.1.-B4.2 can be organized in a common package of disciplines that will form a common base for future graduates from different fields or within the same broad ISCED field or ISCO major/ minor/ unit group.

It is the second step in recognition of qualifications and developing mobility, if these disciplines are taught at European level.

The competences from A and B1-B3 and the related disciplines are characteristic of the qualification level. In our case, we focus mainly on level 6 and 7 EQF/NQF.

B4.3 Professional, the ones that give the qualification, we can classify them according to figure no. 2 in: a. Fundamental, specific for the common ESCO skills and competences of the ISCO minor group; b. Field related, specific for the common ESCO skills and competences of the ISCO unit group; c. Expertise, specific for the common ESCO skills and competences of each ISCO/ ESCO occupation, extended/ unique/ dominant – here there should be a limitation for a bachelor program; d. Specialized, the skills and competences that give the narrow specializations of a extended/ unique/ dominant occupation, are the result of post-graduate or master programs; e. management, up to middle management level.

Competences under B.4.3. a) and b) are the third level of automatic recognition of qualifications. Thus, a bachelor study program should contain disciplines for five levels:

- 1-general and basic: refining the ones under A plus B1, B2 and B3 - around 30%
- 2- professional technical general and common at the workplace: B.4.1., B.4.2. - 10%
- 3-fundamental – B.4.3.a. - 15-20%
- 4-field related – B.4.3.b - 15-20%
- 5-expertise –B.4.3.c. plus practical training related to the field and specialization-20-30%.

The fundamental and field related competences, which lead to similar disciplines as denomination, should be another professional package - PP, common in the study programs which, added to those under group A and B1-B3, B.4.1., B.4.2., B.4.3.a) and B.4.b) would form a common platform in vocational training at European level, that common body - CB up to 70% of the common curriculum / ISCED field.

The differences should appear at the level of expertise and specialized competences and disciplines, that individual body - IB. Their recognition, if packages of common competences recognized at European level, could be made automatically up to level 4, which would be a big step towards the mobility of skilled labor in Europe.

Conclusions

Focusing the student on education, especially on vocational and higher education, requires a new approach from the perspective of what the student wants in the new period of globalization and the opening up of communication and transport sectors. What do young people want? A job, the mobility needed for this purpose and therefore a simple and fast recognition of qualifications. With the new Europass, the formal part will be realized quickly, but it remains the professional, curricular part, which is more complicated today. What employers want: a person trained for society and working with people. What society wants:

responsible people, citizens who participate in the problems of society and with care for the environment and their fellow citizens.

In this article we want help solving these requests, as is the case in some regulated fields, we propose a new method of designing the curriculum based on two packages:

- a common package or body - CB of general and basic disciplines for all the fields to which is added a package of fundamental professional and field related disciplines, specific to each ISCED broad field established at European level by specialists
- a package of specialized expertise and specialized disciplines established at national or individual university level - IB.

The benefit of the students would be that the first package must represent at least 70% of the preparation at bachelor level and could be automatically recognized if the learning outcomes were similar. This means one diploma for all.

If we fail to recognize *qualifications* in the next few years as quickly as possible and automatically until 2025, at least as principle, it is possible that the principles on which the European Union was built may suffer and their credibility will decline. This means that common rules, standards and courageous approaches are needed. Progress through standardization is a wish, but not easily accepted by many.

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THE EVOLUTION OF AGRICULTURAL COOPERATIVES IN ROMANIA

Andrei-Mirel Florea¹, Florentin Bercu², Riana Iren Radu³ and Oana Iuliana Mihai⁴

¹⁾³⁾⁴⁾ *“Dunarea de Jos” University of Galati, Romania*

²⁾ *Union of the National Branch of Crop Sector Cooperatives, Bucharest, Romania*

E-mail: floreaandrei@yahoo.com; E-mail: florentinbercu@gmail.com;
E-mail: raduriana@gmail.com

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Abstract

Agricultural cooperatives could be considered a solution to maintain farmers market. In Romania, the interest for agricultural cooperatives has increased exponentially in the last period, especially due to being offered tax facilities. Romania is in the process of experimenting with the implementation of agricultural cooperatives, as compared to the countries of Western Europe, being necessary to create a solid basis for the further development. Understanding the principles of the cooperative association and their application is an effort that ensures the stability and performance of the cooperative. The first part of the article proposes the presentation of a series of elements that must be considered when establish a cooperative, and continues with an analysis of the legislative changes that have occurred due to the evolution of the number of agricultural cooperatives in Romania. Increasing the importance of structures representing farmers' interests is a priority at national and European level. According to the research, the farmers' association has made some progress in Romania, but measures are still needed at national level for their development.

Keywords: farmer's association; agriculture, cooperative, Romania,

JEL Classification: P13, P17, P11

Introduction

The involvement in collaborative partnerships represents an essential element in ensuring the durability and sustainability of an organization (Fobbe, 2020). The agricultural cooperatives are organizations which have been an important actor within agro-food system. (Altman, 2015). The development of the agricultural cooperatives due to the tendencies manifested on the agro-food market represents a counterbalancing element, ensuring an increased sales power and the reduction of the costs for farmers (Abate, 2018; Istudor et.al, 2019).

The necessity of these forms of association has been understood and promoted in the last years also at the level of the Romanian agriculture. The legislative bases for the establishment of the agricultural cooperatives had been laid in the year 2004, by Law no. 566/2004. They appeared as an answer to the need of small and medium farmers to be present on the market, “the cooperatives taking over elements from commercial companies and non-patrimonial / non-lucrative / nonprofit associations and foundations” (Lăpusan, 2010). Judging after the stages covered by the countries from the Western Europe in the of cooperative’s development process, time is needed so that they would consolidate their position in the Romanian food chain (Dragoi et al, 2018). We consider that for the fulfillment of this desideratum, it is initially necessary to understand two important aspects which we are going to study in this paper. A first aspect is related to the education in cooperatives’ area. The differences between cooperatives and the old communist structures of CAP (Agricultural Production Cooperatives) and IAS (State Agricultural Enterprises) type start to be more and more obvious for farmers, but the knowledge on the notions of functionality of the cooperative as a whole and the understanding of the obligations and benefits of the members must be deepened (Sánchez-Báez et. al, 2018). In the last years, it has been manifesting an increasing openness to association, fact which makes us believe that the necessity and possible contribution of the cooperatives are understood. (Wolz et al., 2019).

We believe the answer to a series of questions must be clear before acceding to the cooperative, such as: “What is an agricultural cooperative? How is it organized? Which are the obligations of its members, or of the cooperative? Who are the other members?” etc. (Food and Agriculture Organization of the United Nations (FAO), 1998)

A second important aspect dealt with in the present article is connected to the evolution of the legislative framework on the agricultural cooperatives and their number.

The last part of the paper is reserved to discussions and conclusions, trying to present a true image of the development of the agricultural cooperatives in Romania.

Materials and methods

The research started from the study of the scientific literature, which mentions criteria necessary for the efficient functioning of agricultural cooperatives. The following databases were used to identify the bibliographic material: Web of Science, Scopus and Google Academic. Starting from the first national regulations regarding cooperatives (Law no. 566/2004), the changes that took place between 2005-2019 were analyzed and were elements identified that contributed to the adaptation of the legislation for a better development of the cooperatives in Romania. The evolution of the number of cooperatives, the government policy and the establishment of national unions and organizations were analyzed. Data from National Institute of Statistics (NIS), National Trade Register Office (NTRO), and Ministry of Agriculture and Rural Development (MARD) were used. The information collected was processed, analyzed and interpreted.

Important aspects in the creation and development of an agricultural cooperative

The cooperative is an enterprise held by many farmers which activate in a production chain. (Feng & Hendrikse, 2012). The farmers delegate a part of the activity of their company to the cooperative. According to Bercu and Sofone (2018), the first stage in the creation of a cooperative is represented by the creation of a homogenous group, whose interests and ambitions are similar.

They must be willing to invest in order to increase the results on long term. But the problem of the time horizon approached by Van Dijk et. al. (2019) appears here, according to which the expectations from the cooperative can be different. Van Dijk explains that although the general concern is for future development, the order of the steps for their performance depends in general from the financial and conceptual problems of each and every member.

Accordingly, within the cooperative, the importance of the report between the individual interest and the collective interest must be less than one unit. According to Istudor and Popescu (2017), the accession to a cooperative group must be grounded on a series of well defined criteria, among which the profile of the company, the dimension of the activity and the attitude of the company have an enormous importance. The attitude is explained as a combination of elements such as: “entrepreneurial spirit, aspiration to innovation, generosity and tolerance”.

Starting from the general interests within an organization, Dunn (1988) identifies basic principles which take place in an agricultural cooperative:

- “The User-Owner Principle” describes the interdependency between holding and financing a cooperative and its usage. “The one who holds it and invests is the one who uses it”.
- “The User-Control Principle” is represented by the connection between exercising control and the usage of the cooperative. “The one who controls it is the one who uses it”.
- “The User-Benefits Principle” defines the main purpose of a cooperative, respectively the generation of benefits for its members and their distribution to them, based on the transactions performed through the cooperative.

By using Dunn’s principles, we presented in a comparative manner the differences and similarities between an agricultural cooperative and a commercial enterprise. On the basis of the establishment of a cooperative, as well as within a commercial company, a well defined vision is required, the difference being in the organizational purpose, property, control and distribution of the excess, as it is represented in Figure no. 1.

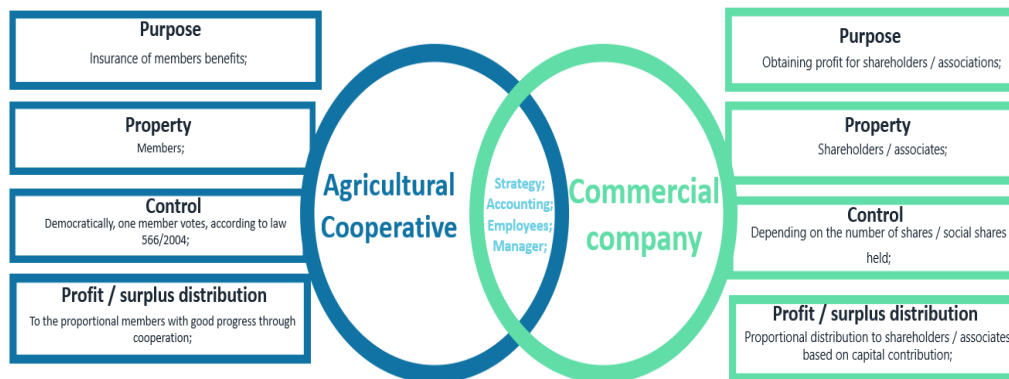


Fig. no. 1 Differences and similarities between the agricultural cooperatives and commercial companies

Source: Adapted by the author according to Chloupková, 2002

The differentiation between own business and the cooperative is necessary. The purpose of the company is to obtain profit, while the purpose of the cooperative is to obtain profit in order to ensure the best services to its members, either by selling the products at the best prices or by purchasing inputs at the best prices.

Within an agricultural cooperative, the Government is represented by the General Meeting of Shareholders and the Board of Directors, and the control institutions are represented by permanent and substitute censors.

According to the Law no. 566/2004, the members have the obligation to use at least 50% of the production through the cooperative. At the same time, they must be involved in the cooperative’s activity and support it both financially and from information point of view, according to the provisions assumed by the Articles of Association. The member capacity in two cooperatives operating in the same sector of activity is not allowed. The accession to an

agricultural cooperative implies the observance of all the provisions of Law no. 566/2004, of the Articles of Association, as well as of the decisions of the General Meeting of Shareholders. The cooperative has the obligation to identify and implement a market strategy that will bring to its members certain and reasonable incomes. At the same time, there must be good coordination of all the administration, procurement, planning and sales activities.

The rules at the cooperative level are formulated and applied in a unitary manner to all members.

The activity of the cooperative must comply with the provisions of Law no. 566/2004, out of which we mention: out of the production capitalized by a cooperative, at least 70% must be from members; the transactions must be recorded; a member cannot hold more than 20% shares etc.

In general, those who do not understand the particularities of the cooperative and participate in the association can destabilize the collective activity (FAO, 1996) In supporting this statement, the following arguments can be specified:

- They can be conflict, faction generating factors;
- They will not fulfill their obligations in due time; for example, the lack of payment of the debts for the purchased products brings on the start of a lawsuit, but up to the recovery of the money, pressure will be put on the other members; such a lawsuit can last for several years.
- They are not involved in the activity of the cooperative;
- They can lead up to the bankruptcy of the cooperative. Such an experience will make the other members more reserved in the association process.

Considering these aspects, the monitoring and selection process of the members' activity must be continuous. For a strong cooperative, informed, innovative and active members are required in supporting the development initiatives of the cooperative.

The evolution of the agricultural cooperatives

The agricultural cooperatives in Romania have known a continuous development process starting with 2005 and up to present, detaching themselves from the hesitations of the farmers in what concerns the association from the first 15 – 20 years after the communist period (Micu et. al, 2015).

For the adaptation of the local requirements of the agricultural cooperatives, a series of measures have been initiated for improving the framework law of the agricultural cooperatives which were presented within the appendix.

Among the most important measures, we mention the application of tax facilities for cooperatives, measure which appeared in the original variant of the law, but the members of the agricultural cooperatives have been actually benefiting from it starting with the year 2019. Another measure with a strong impact on the development of the cooperative activity is represented by the establishment of a lower limit regarding the production of the members sold through the cooperative. It is a necessary condition to ensure the minimum rollover for a cooperative to develop, to capitalize and to have the ability to make joint investments for the integration of the members' production and the fair distribution of the profit on the food chain. Like any other entity, the agricultural cooperatives need financing to develop. This has been speculated also in the legislative framework to avoid the full distribution of profits. In the cooperatives in Romania where it is applied, it has been proven that they are credible, powerful, that they have been performing an efficient and sustainable activity for several years for its members and are recognized as successful examples in Romania (Boboc et. al, 2017). The involvement of national organizations in improving the law of agricultural cooperatives was defining. These constituted the link between farmers and State's bodies. At the same

time, there is an increase of the initiatives of consultation, education at national level in order to understand the mechanism of association as a whole. (Stanciu et. al, 2019)

The cooperatives are not for all farmers, only those who are aware and involved will win.

A series of measures have also been implemented that have increased the transparency of the cooperative's activity and the active involvement of its members.

These measures were influenced by the increase of the number of cooperatives but also by the strengthening of the voice of the cooperative members within the governmental institutions through the national organizations (Florea et. al, 2019).

In order to capitalize the farmers and increase their competitiveness through cooperatives, it is required that the cooperative must be strong, consolidated and to have investments to increase the added value of the members' primary production. This can only happen if it has many and serious-minded members, who carry out economic activity through the cooperative. According to the data processed by NTRO, the turnover at the end of 2018 for the agricultural cooperatives in Romania was about 270 million Euros, occurring the doubling of this amount as compared to 2015.

In January-February 2020, 26 agricultural cooperatives were registered at NTRO according to Figure no. 2.



Fig. no. 2 The registration of agricultural cooperatives in the period 2004-04.202

Source: NTRO

The establishment of the National Register of Agricultural Cooperatives from Romania has represented a good method for MARD to acknowledge the evolution of the cooperatives in Romania, how they operate and when they perform the public policies for cooperatives, to be able to take into consideration also the official updated data, existing at NTRO.

Conclusions

Adapting the associative forms to the specifics of the Romanian agriculture is a lasting process. The members of the agricultural cooperatives that have managed to maintain the union through active involvement and compliance with the cooperative principles also have benefits.

It is not so important the increase in the number of registered agricultural cooperatives, as it is more important the number of the functional ones. By functional cooperatives, we mean those cooperatives through which the rollover is carried out and which positively influence the activity of its members. Only these can contribute to ensuring the food chain which it is militated for.

It is important to establish strong cooperatives in Romania that will withstand, develop over time. It is necessary to avoid that the agricultural cooperatives are similar to any intermediary LLC. They receive facilities to serve members fairly and not just to make a profit.

At the same time, it is necessary to establish some obligations that would ensure the smooth functioning of the cooperative and reinforce the certainty that it can help the members and

comply with the objectives they undertake together. To be successful, a cooperative must be disciplined and have clear rules for both employees and members. Only in this way it will build a serious, powerful image and brand.

Acknowledgement

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Appendix

An	2006	2007	2011	2012	2013	2016	2019
Additions / Amendments of the Law no. 566/2004							
Law 566/2004	Law 134/2006 Law 343/2006*	Law 32/2007	Law 274/2011	Law 187/2012	Law 95/2013	Law 164/2016	Law 21/2019
Art. 1-3 – Defining the cooperatives	-	Completion of the definition;	Completion of the definition;	-	-	Completion of the definition;	Completion of the definition;
Art.4-7 – Types of cooperative, minimum number of members and domains of activity;	Redefinition of cooperatives of type 2;	-	-	-	Completion with cooperative of type 1 and 2;	Completion with cooperatives of type 1 and 2; The possibility to develop many activities provided by the law within the same cooperative; the introduction of technical-economical unit notion;	Defining the cooperatives of order 1, 2 and 3;
Art. 8-9 – Scope and principles of the cooperative;	-	Addition of the principle of equal opportunities between members;	-	-	-	-	Explaining the cooperative principles;
Art.9 – Types of members;	-	-	-	Persons who committed offences cannot be founding members or part of the management bodies;	Redefinition of the list of persons who can be members;	Introduction of the notion of associate cooperater member;	Clarifications on the associate cooperater member;
Art. 10-14 – Establishment: Articles of Incorporation, list of members and Articles of Association;	-	Addition of elements of Articles of Incorporation	-	-	Addition of information to the members' list	Clarification of establishing documents. Right of usage of members' assets based on agreement and according to the Articles of Association	Additions on trading a minimum of 50% from production; reintegration of the percentage of 30% for trading the production of non-members;
Art. 15 – Share capital;	-	Evaluation of the assets' contribution in kind;	-	-	-	Special register; Clarifications on the changes to the share capital;	Detailing the minimum capital for each type of cooperative;

An	2006	2007	2011	2012	2013	2016	2019
Additions / Amendments of the Law no. 566/2004							
Law 566/2004	Law 134/2006 Law 343/2006*	Law 32/2007	Law 274/2011	Law 187/2012	Law 95/2013	Law 164/2016	Law 21/2019
		assignment and donation of shares;				Establishment of the reserve fund;	
Art. 16-21 – Rights and obligations of the members; Relation between cooperative and member;	-	The value of economic activities developed based on the cooperative relations is awarded to the cooperator member; Exclusion of a cooperator member is proposed to the Board of Directors and is approved by the General Meeting.	-	-	-	Trading through the cooperative of minimum 50% from the production of each member;	Additions and clarifications to the rights and obligations of the members;
Art. 22-37 – Management and control bodies;	-	-	General Meeting =all members; in the Articles of Association, there are mentioned the principles for the operation of the General Meeting and the right to vote, with law observance;	-	-	-	The structure and obligations of the Board of Directors; the Employment of an Executive Director; the Conflict of interests within the management bodies; the responsibilities of the president of the cooperative;
Art. 38-43 – The registers of the agricultural cooperative, the financial statements, profit distribution;	-	The cooperative's profit distribution according to the decision of the General Meeting;	-	-	-	-	The compulsoriness of presenting the financial statement with 15 days before approval; the priority distribution of profit for development, financing activities of the cooperative; the establishment of the National Registry of Agricultural Cooperatives;
Art.44-47 – Cooperative's fixed assets;	-	-	-	-	-	Provisions on the administration of the members' assets;	-
Art. 48-57 – Merger, division, dissolution, liquidation;	-	-	-	-	-	-	-
Art. 58-69 – Branch Unions and their functionality;	-	-	-	-	-	-	Clarifications on the association of the Branch Unions;
Art. 70-75 - Central Union of Agricultural Cooperatives;	-	-	Modification of the definition;	-	-	-	Abrogated;
Art. 76 – Support of the State for cooperatives;	*It is eliminated the exemption on tax on profit in the first 5 years	-	-	-	-	Introduction of new facilities and exemptions for cooperatives;	Clarifications on tax facilities; access to financing programs;

CASE STUDY ON THE CONNECTION BETWEEN THE STRUCTURE OF THE MANAGEMENT SYSTEMS AND THE PERFORMANCE OF THE BANKING ENTITIES IN ROMANIA

Cristina Elena Bigioi¹ and Adrian Doru Bigioi²

¹⁾ *Politehnica University of Bucharest, Romania*

²⁾ *The Bucharest University of Economic Studies, Romania*

E-mail: cristina.dumitru@upb.ro; E-mail: adrian.bigioi@cig.ase.ro

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Abstract

Banks play a decisive role in the economic growth through their quality as intermediary in the relationship between economies and investments. The purpose of their activity is to obtain bank profit. The system of the corporate governance protects the investors' interest. The present case study aims to analyze whether there is any connection between the structure of the management systems, respectively if their type and the independence of the members influence the performance of the banks in Romania. The analysis was made based on the financial data for the year 2018 of 24 commercial banks in Romania. The results of the study show that most banks that have a dual management system and independent members have a higher rate of return.

Keywords

Corporate governance; Performance; Independence; Administration system.

JEL Classification

M12; G34

Introduction

The role of corporate governance implementation is to increase the financial performance of the companies, respectively to increase their share value. The implementation of corporate governance ensures the existence of effective control at entity level, reducing the risk and thus protecting the interests of investors. Based on these considerations, the present study aims to analyze the financial results of the Romanian banking entities and to determine whether the profitability of the total revenues is higher for the entities that have independent members and have a dual management system.

Corporate governance is the subject of several theoretical and empirical studies, at national and international level. One of the important aspects studied related to the relationship between corporate governance and the performance of the entity where it is applied.

Literature review

A firm can maximize value if it does not ignore the interest of its stakeholders (Jensen, 2001). Better-governed firms are relatively more profitable (Brown and Caylor, 2004), as demonstrated by applying a model of corporate governance analysis (containing 51 factors) on 2327 companies. Good performance was most highly associated with good governance, as measured using executive and director compensation.

The independence in the governance structure of banks in UK influence risk and performance (Harkin, Mare and Crook, 2020).

The management independence has a positive influence on performance for listed companies in Thailand, along with other factors: board size, meeting and dual role, audit committee meeting. (Farooque, Buachoom and Sun, 2020)

A significant association between performance and corporate governance was identified in the case of the independence of the members in the board structure for 180 companies from Malaysia (Mohamad et al., 2020). For the analysis of the link between corporate governance and firm performance, ROA and Tobin'q were considered for performance measurement.

The significant positive relationship between company's performance and corporate governance was demonstrated in case of listed companies in Malaysia by Bhatt (Bhatt and Bhatt, 2017).

The relationship between board independence and ROA is negatively insignificant for listed banks in Nigeria (Mustapha et al., 2020).

Liu (2011) considers that 65% of the board structure must be independent members.

Board independence does not affect the performance of companies in Bangladesh, but the impact is positive for companies from Singapore (Mamun, 2016). The performance was measured by ROA and ROE indicators.

The performance of 45 listed companies from China is accelerated by the governance structure of firms with independent director, institutional investors, female directors and audit committee (Peizi, 2020).

The way in which the human resource is trained should consider the innate abilities of each individual. The strong use of human resources avoids the waste of a contribution that could make the difference between failure and success (Nicolae, 2017).

Research methodology

In order to carry out the research, the Romanian banking entities mentioned on the National Bank of Romania site were considered. All 24 commercial banks available at <https://www.bnro.ro/Banci-comerciale-1333.aspx> have been selected.

The necessary data about each entity were extracted from the websites of the entities concerned, more precisely from The Annual Financial Statements and Reports on the requirements of publication and transparency, with information related to 2018.

The extracted information refers to:

- The earned income
- The net result of the financial exercise
- The existence of independent members in the management structure
- The type of administration (monist or dualist)

The data were grouped according to the classification criteria imposed by the specific objectives of each problem. Based on the data processing, conclusions were established.

The research was conducted in the following stages:

- the data was selected
- the data was been grouped according to specific objectives
- the data was processed
- the results were centralized
- the results were analyzed and interpreted
- the conclusions were drawn.

We issued the following hypotheses:

H1 Banking entities with independent members have a higher rate of return.

H2 Banking entities with dualist management system have a higher rate of return.

Considering the financial results of the Romanian banking entities from the financial statements for the year 2018, we calculated the profitability of the revenues based on the following relation:

$$R(\%) = P / V_t * 100 \quad (1)$$

where:

R - the profitability of the revenues

P - the net result of financial exercise

V_t -total income

We defined the following test function:

$$F_4(ts_4) = \{ f(\delta_1, \delta_2, \delta_3, \delta_4) \mid 0 \leq f_{4i}(ts_{4i}) \leq 4, \\ \delta_1, \delta_2, \delta_3, \delta_4 \in [0;1], \\ i \in [0;24], \\ F_{4i}(ts_{4i}) = (f(\delta_{1i}) + f(\delta_{2i}) + f(\delta_{3i}) + f(\delta_{4i})) \quad (2)$$

where:

δ_1 - the estimated value of the parameter checking on the condition that there is an independent member in management system

δ_2 - the estimated value of the parameter checking on the condition that the bank entity has a dualist management system.

δ_3 - the estimated value of the parameter checking on the condition that the bank entity has in 2018 a positive rate of return

δ_4 - the estimated value of the parameter checking on the condition that the bank entity has in 2018 a rate of return on growth compared to the previous year.

For each bank, the score was calculated according to the above function. The results were centralized and interpreted.

Results of the study

The entities were named B01, B02...B24.

For the banking entities subjected to the study, the following scores were obtained for the created function F (fig. no.1):

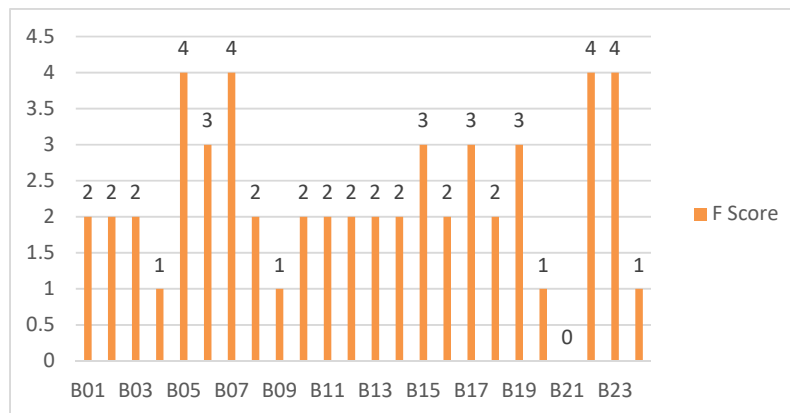


Fig. no. 1 F Scores obtained by the bank entities

Source: Authors' own calculation, based on data extracted

It can be observed that there are only 4 entities (B5, B7, B 22, B23) that have fulfilled all 4 conditions, obtaining maximum value for the created function.

A single bank (B21) does not meet any of the criteria, which means it has not achieved a positive result (profit) in 2018.

The rate of return is calculated for each entity (Table no 1).

Table no. 1 The rate of return

Bank entity	The net result of the year	Total income 2018 (RON)	Rate of return %
B01	21,043,000	580,848,000	3.62%
B02	-9,170,394	734,612	-1248.33%
B03	190,420	25,385,388	0.75%
B04	23,467,550	190,332,801	12.33%
B05	970,447,000	3,082,263,000	31.48%
B06	113,500,000	177,400,000	63.98%
B07	37,501,000	231,478,000	16.20%
B08	1,219,391,000	3,593,980,000	33.93%
B09	15,317,000	56,701,000	27.01%
B10	1,545,989,000	2,980,916,000	51.86%
B11	354,598,000	1,147,152,000	30.91%
B12	-14,718,083	48,630,274	-30.27%
B13	53,009,000	209,432,000	25.31%
B14	11,863,000	428,742,000	2.77%
B15	8,356,909	92,100,000	9.07%
B16	95,759,480	262,279,197	36.51%
B17	10,501,223	109,910,000	9.55%
B18	2,567,417	15,824,081	16.22%
B19	26,200,000	470,700,000	5.57%
B20	-266,000	160,003,000	-0.17%
B21	-5,241,316	63,527,898	-8.25%

B22	906,020,000	2,545,431,000	35.59%
B23	550,799,000	1,581,149,000	34.84%
B24	-39,110,000	443,312,000	-8.82%

Source: Authors' own calculation, based on data extracted

The rates of return are represented graphically below (fig. no. 2):

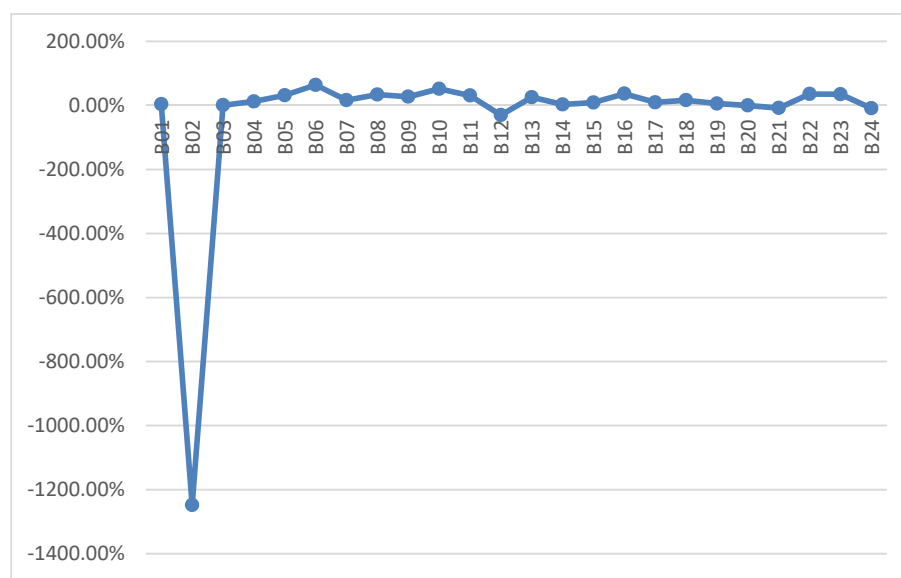


Fig. no. 2 Rates of return (percentage)

Source: Authors' own calculation, based on data extracted

5 banks in the sample do not make profit in 2018, 19 bank entities have a positive rate of return. B02 had very high expenses compared to the revenues obtained in 2018.

Regarding the independence of the members and the type of management system, the data are centralized below. (Table no.2.)

Table no. 2 Independence and Type of management system

Entity	Independent member	Management System
B01	Yes	Unitary
B02	Yes	Dualist
B03	Yes	Unitary
B04	No	Unitary
B05	Yes	Dualist
B06	Yes	Unitary
B07	Yes	Dualist
B08	Yes	Unitary
B09	No	Unitary
B10	Yes	Unitary
B11	No	Unitary
B12	Yes	Unitary

B13	No	Unitary
B14	Yes	Unitary
B15	Yes	Unitary
B16	No	Unitary
B17	Yes	Unitary
B18	No	Unitary
B19	Yes	Dualist
B20	Yes	Unitary
B21	No	Unitary
B22	Yes	Dualist
B23	Yes	Dualist
B24	Yes	Unitary

Source: Authors' own calculation, based on data extracted

We grouped the entities according to the type of administration and the rate of return obtained (Table no.3).

Table no. 3 Number of entities with positive rate of return

Management System	R>0	R<0
Unitary	14	4
Dualist	5	1

Source: Authors' own calculation, based on data extracted

The unitary management system predominates (75% of entities), and 79% of entities recorded a positive rate of return in 2018. The only entity with dualist system and with negative profitability is B02 (even if it has independent members). Most banks (17 of them) have independent members. (Table no. 4).

Table no. 4 Number of entities with independent members

Management system	With independent members	Without independent members
Unitary	12	2
Dualist	5	0

Source: Authors' own calculation, based on data extracted

In order to visualize the characteristics of the banks that obtain profitability, we have represented them graphically in descending order of the obtained rate of return (fig. no. 3).

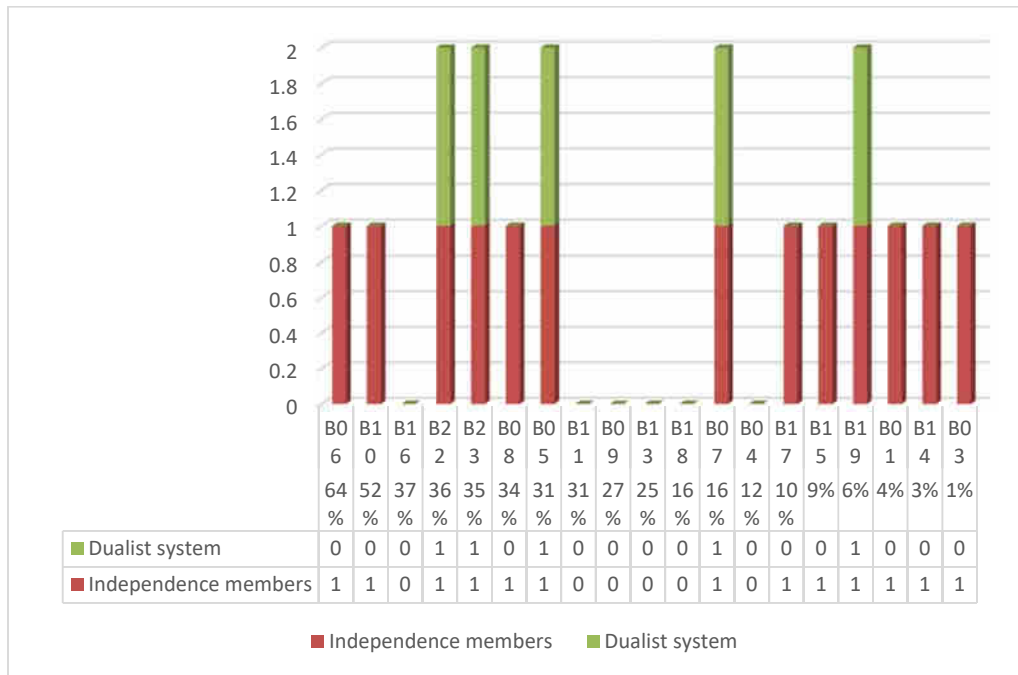


Fig. no. 3 Ranking of profitability rate

Source: Authors' own calculation, based on data extracted

In order of profitability, the first two entities apply a unitary system, but they have independent members. The third ranked bank has a unitary system and no independent member. 5 entities with dualist system and independent members are ranked 4, 5, 7, 12, 16 out of 19 entities with positive rate of return.

Hypothesis H1 Banking entities with independent members have a higher rate of return

Analyzing the financial data, it can be seen that 13 of 16 banks with independent members (which means 81% of them) registered a positive rentability. The first banks classified according to the size of the rate of return have independent members.

Hypothesis H1 can be confirmed for 81% of banks. The existence of independent members is not directly related to the positive profitability for all banks subject to the present study.

Hypothesis H2 Banking entities with dualist management system have a higher rate of return

5 out of 6 banking entities that apply the dualist system (this means 83% of them) have a positive rate of return. The entities with dualist system are not in the first 3 places in the hierarchy of rates of return. Positive profitability is assured for 83% of all banks subject to the study applying the dualist management system.

Conclusions

The results of the study show that 16 of the 24 banks have independent members. 6 banks have a dualist management system and independent members, and 5 of them have a positive rate of return.

18 banks have a unitary management system and 11 of them have independent members. 7 of them have a positive return. It turns out that most banks that have a dual management system and independent members have a higher rate of return. The dual management system is implemented at a small number of banks in Romania.

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QUALITY MANAGEMENT IN THE TOURISM SECTOR IN TRANSYLVANIA

**Corina Aurora Marin (Barbu)¹, Valentina Irena Tudoran (Niculiță)²
and Elena Condrea³**

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

³⁾ *Ovidius University of Constanta, Romania*

E-mail: coribaru@yahoo.com; E-mail: irena_niculita@yahoo.com;

E-mail: elenacondrea2003@yahoo.com

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Abstract

In the last decade, many companies have focused on total quality management as a mean of improving profits, market share and competitiveness.

The Transylvania region represents a social construction created by economy, political, cultural and administrative discourses and practices with the serious possibility of becoming a center of power in the tourism sector based on leisure, recreation and rest tourism, cultural tourism but also for business tourism and other professional reasons.

Unpredictable changes in customer preferences, the existence of new tourism destinations, market competitiveness, changes and the threat of unstable labor due to globalization, as well as changes in demographic, economic and technological developments require increasing efforts of tourism market players to attract and retain customers.

In this paper we tried to highlight the role of implementing quality management in the development of tourism in Romania, starting from a brief analysis of tourism in Transylvania. Thus, in the first part of the paper we reviewed the role and importance of quality management in the development of a company, and in the second part we focused on quality assurance in the tourism sector in Transylvania. In this regard, we analyzed the indicators referring to the tourist reception structures with tourist accommodation function in Transylvania, as well as the number of staff employed in the tourist reception structures with tourist accommodation functions in Transylvania for the period 2016-2019.

Keywords

Total Quality Management, tourism, Transylvania, customer satisfaction.

JEL Classification

C46, L83, Z32

Introduction

The relevant contribution in the debate of quality management in the hotel industry is the quality as a numerical and quantifiable direction in measuring the evolution of the dimensions of quality management in Romania, an aspect achievable with the help of all the agents involved in the dynamism of the market environment.

The quality describes the existing feelings of the customer, indicating the actual performance of the product or service, with the help of which the customers reveal their expectations through the comparisons that they make; therefore, the principle of purchase is the personal way of the tourist to choose the one that suits him.

The European Quality Organization (EOQC) and the American Quality Society (ASQ) place quality as "the totality of properties that demonstrate the degree to which a good or service can meet a particular need" so that to meet a wide range of customer needs it is necessary to examine the way of implementing the total quality management (TQM).

Quality management in the hotel industry is a process with unique challenges when developing the quality system that continues to generate organizational processes that result in high quality products and techniques; it is the guarantor of an obligatory act of progress to maintain a high level of excellence focused on setting major achievable goals through the progressive implementation of the quality strategy and the general course of activity for continuous innovation.

The researchers found that TQM programs improve organizational performance in terms of operational as well as financial aspects; improve teamwork, morale and work of employees, but also their attitude, which increases customer satisfaction. This results in competitive advantages, challenges that encourage and stimulate the commitment of management and the proper training of employees for the implementation of TQM. (Ilies and Crisan, 2011).

The result of the success of quality management is not immediate and may require a longer period of time to achieve. Strategies (or critical success factors to be identified) need to be continually reviewed to ensure the effective operation of TQM programs, so that management commitment, involvement of all employees, adequate employee training and resource provision are vital for successful quality management implementation in tourism.

TQM points and concepts have changed over time; the main concepts were introduced and developed by quality experts such as Deming, Juran, Crosby, Fageinbaum and Ishikawa. The focus has evolved from product quality to value-added products or services (Juran and Godfrey, 1998).

Recognizing the challenges will help management with strategies to overcome potential obstacles, which also helps reduce costs, time and resources; in addition, by knowing the right strategies or critical success factors, management teams can better use their strengths, identify weak points so they can understand the process of maximizing and using resources.

Through this study we tried to better understand the experience of hoteliers in Transylvania in implementing quality management in this sector of activity and, based on the results, to issue some conclusions valid for tourism in Romania.

Literature review

In parallel with the rapid technological and socio-cultural changes, the ways of ensuring the quality of products and services, including tourism, have also evolved. Analyzing this evolution we can highlight four stages with specific characteristics, briefly detailed in the following lines.

Quality assurance through control was at the base of the management principles, as well as in the organization of activities regarding the decomposition process of the production process of a product in elementary operations, limitation of responsibilities, specialization of functional units; thus, there was a separation of those who make decisions by those who

execute them and respectively those who control their fulfillment. The quality was thus ensured by the final control of the components, with the aim of identifying and eliminating the inappropriate ones and the attention was focused on the product and less on the process, following the post-process verification of the conformity with the product specifications. By means of quality assurance, it is understood that compliance with these specifications.

Quality assurance by motivating the staff is appropriate to the incipient in the notion of TQM and emphasizes the motivation of the staff with which several relatively independent directions can be highlighted, by developing "zero defects" programs and setting up quality circles. These have reached a great extent in order to prevent the occurrence of defects by discovering their causes through quality circles that promote self-control and the use of material and moral incentives for quality assurance.

Quality assurance through statistical methods is the stage corresponding to the 1950s. The first papers on statistical quality control are published in the 1920s, when the authors propose the use of the statistical quality control sheet; at present, the use of these methods leads to the accentuation of the control over the technological flow, and the identification of the causes of the occurrence of the defects, in order to prevent their occurrence in subsequent processes.

The integrating concepts of quality assurance correspond to the 1980s and have found their applicability under the name of "Total Quality Control" (TQC), designating the activity of keeping under control the quality. This approach is increasingly oriented towards the activities carried out for quality assurance to customers, the implications of processes and their results on the environment through the idea of a systemic approach of customer-supplier relationships. Thus, it is being shaped the emergence of a new concept "Total Quality Management" (TQM) in which it becomes important the consistent orientation towards "process", where is being aimed the optimization of processes throughout the product trajectory, starting with market studies to identify the needs and until the phase of post-use, of the reintegration in nature of the results of this process (Murphy, 1997).

The success of applying the specific characteristics of quality in the tourism sector depends very much on the correct implementation of the system, which consists in careful planning of the stages in the diagnosis. It is very important to train an active participation of the management and all the personnel through the management for preliminary information and improvement, as well as the preparation of the human resources, which has most often been associated with the ability to properly execute the tasks received as per some unique challenges.

Under the conditions of the current market economy, the quality management in tourism depends on the improvement of the activities, the modernization of the flow, the technology, the sustainable responsibility and the definition of the organizational characteristics.

Research methodology

Dynamic changes in the tourism market require a major qualitative transformation for most segments of the tourist offer of a destination; this involves the survival of tourist destinations by intensifying actions to continuously improve the quality and supply of tourist services.

Having as object of study the quality management in the tourism sector in Transylvania, we have chosen as barometer, the numerical evolution in the region of the tourist reception structures with accommodation function as the main purpose, in order to find out if the contribution of the management quality is a favorable one.

The data collection was done with the help of the statistical directories available at national level.

Transylvania is a historical and geographical region located within the Carpathian arch, one of the most important historical regions of Romania. Transylvania is given a very broad meaning, because it designates the territory west of the Eastern Carpathians and north of the Southern Carpathians, thus including the western half of Maramureș, Crișana and Banat.

On the territory of Transylvania are the counties of Alba, Bistrița-Nasaud, Brașov, Cluj, Covasna, Harghita, Hunedoara, Mureș and Sibiu, they are fully classified in this region, and there are also partially classified counties in the region, such as: Bacău (Ghimis-Faget commune), Caraș-Severin (Băușar commune), Maramureș (Targul Lăpuș city with its surroundings), Neamț (Dămuc, Bicaz-Chei and Bicazu-Ardelean communes), Sălaj (east and north of the Meseș mountains), Suceava (at west of the Dorna and Bistrița Aurie rivers) and Vâlcea (a small part north of the Lotru river).

New areas of dialogue are emerging in the new economic, social and cultural frameworks of the tourism sector, as is the case for certain areas in Transylvania, which bring a competitive advantage to a tourist destination; for example, the village of Viscri and the surroundings with the Saxon villages have known a special recognition among tourists in recent years, with the visits of Prince Charles to the house in Viscri.

The indicators chosen to analyze the quality management in the tourism sector in Transylvania are *the tourist reception structures with tourist accommodation function and the number of the staff employed in the tourist reception structures with tourist accommodation functions*; data collection was available with the help of official data provided by the National Institute of Statistics in Romania.

Results

It is known that, due to the high degree of tertiary, direct and indirect tourism determines the positive development of the tertiary sector, in particular trade, food industry, hospitality management, trade in services and transport to and from a certain tourist destination. Tourism is a process that is rapidly transforming into the spheres of supply and demand, which considerably influences the intensity and quality of tourism development in many tourist destinations. The term "tourist destination" implies a combined and optimally adjusted market environment which, by developing important and dominant quality management skills, allows it to achieve outstanding long-term results compared to its competition. (Coros and Negruș, 2014)

The tourist reception structures with the function of tourist accommodation (fig. no. 1) have as a priority the protection of tourists and are classified quality-price ratio according to the constructive characteristics, endowments and the quality of the services offered for the tourists (accommodation services and food).

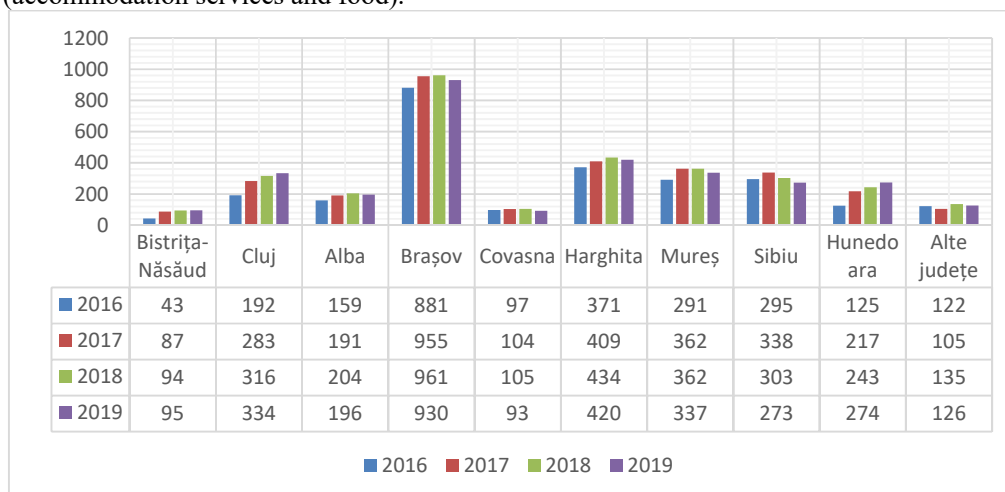


Fig. no. 1 Evolution of the number of tourist reception structures with tourist accommodation function in Transylvania

Source: done by the authors based on the data from the statistical directories

Transylvania has a unique character and a valuable cultural endowment; the socio-economic evolution of each country brings differences in the development stage by the importance of the tourist activities in the sustainable development of a tourist area with the help of a specific form of tourism based on the cultural and historical assets. Thus, we appreciate the figures presented in the previous graph as the engine of a market that produces favorable images of Romania.

Predominant from the analysis of the graph we can notice the upward trend in each county during the analyzed period of time, from which the favorable effects of the management in the hotel industry in Romania result, effects which have generated an impact in the positioning of cultural tourism in the list of travel reasons for tourists, both domestic and international.

Thanks to the successive visits in the Viscri area of some prominent personalities from the European royal world and the interest they showed for the Saxon area, Brasov County together with the Transylvania area experienced a constant increase in the flow of tourists, which has led to an increase in the number of accommodation units of this kind; thus a new destination trend has emerged among tourists.

The year 2016 represented the year of the ascension of the area regarding the alert growth rate of the accommodation units; the total number of reception units increased in 2019 compared to 2016 with 19.49% fact which validates the positive assessment of the quality management in the development of tourism in Transylvania.

The increase in the number of reception units is supported by a variety of factors, namely: improving the legislative conditions for building a housing unit, supporting the government through programs that provide benefits, transferring important cultural events, the possibility of practicing sport activities specific to the area only, existence of culturally diverse and attractive cultural heritage, strengthening the infrastructure and the means of communication, revitalizing cultural objectives and integrating them into tourist circuits.

One of the support pillars of the quality management is the *number of staff occupied by the tourist reception structures with tourist accommodation functions* (fig. no.2) as a social result; thus the region of Transylvania, according to the research results, becomes an actor of construction that can become a center of power with the help of the norms and principles.

We conclude with the help of figure no.2 that the number of personnel employed in the tourist reception structures with the function of tourist accommodation had a positive evolution during the analyzed period of time; so that the year 2018 registered a total number of 10610 employees in the tourism industry in Transylvania, with 29% more compared to 2016. A decrease of 6% was installed in 2019 compared to the previous year, but maintaining the increasing trend of the period analyzed. (INS, 2020)

The implementation of quality management in tourism has implications in the development of this sector through a series of consequences on the use of human resources in the sense of creating new jobs, determining a relatively high level of training of professional structures, which is why we chose to highlight this indicator.

The quality management in tourism has implications in the development of tourism through a series of consequences on the use of human resources in the sense of creating new jobs, determining a relatively high level of training of professional structures, which is why we chose to highlight this indicator.

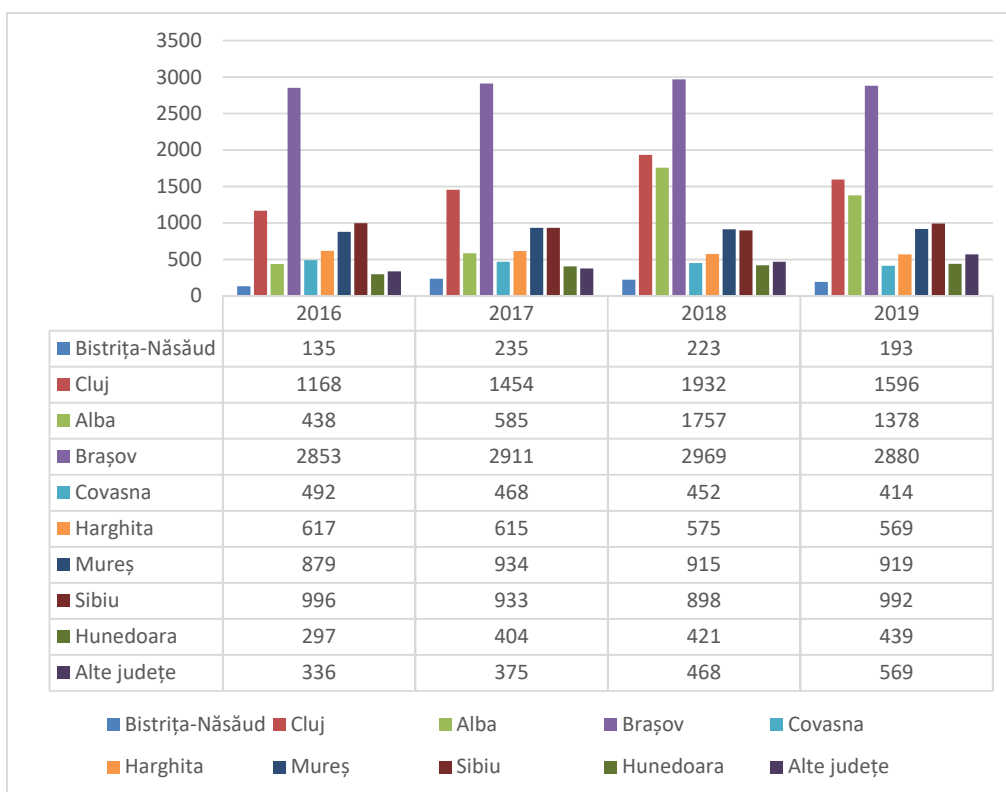


Fig. no. 2 Number of personnel employed in the tourist reception structures with tourist accommodation functions

Source: done by the authors based on the data from the statistical directories

Human resources in tourism have an important role in stimulating demand due to the specifics of tourism, the complexity given by the multitude and variety of components that make their mark on staffing and structure, training on the efficiency of use of labor through training and qualification, training courses professional training with a generating role in formulating the purchase decision, its formation and maintenance.

Proposals and recommendation

Tourism is a complex activity that has to do with various sectors of the society and economy. Due to this fact, the concept of quality management is important, especially for maintaining an appropriate level of satisfaction of the needs of tourists, but also for avoiding the production of unwanted impacts; tourism is, both for the villages in Transylvania and for many other areas of Romania, a new type of activity.

More and more knowledge is needed on assessing the economic impact of implementing quality management in the field of tourism; being difficult to measure directly, it is essential to monitor the effects of the application of procedures and rules specific to quality management.

The selected indicators are numerical dynamizing elements that are the object of analysis at national level and follow the accuracy of the information simultaneously with the manifestation of the conclusions that appear as a result of the application of quality management in the tourism sector in Transylvania.

From the point of view of the tourist resources and of the types of tourism practiced, the region of Transylvania is characterized by variety and heterogeneity determined, mainly, by the distribution in the territory of the relief forms. We find this situation in other regions of Romania, which is why we can make recommendations for the development of tourist services throughout the country. Thus, one of the proposals refers to conducting research studies to find solutions for the development of tourism services in less accessible areas; some resources, areas can be capitalized through various national and international education projects.

It is recommended, due to the contemporary period we are in and the amazing technological progress we are witnessing, enriching the content of the tourist service with new types of activities, mediating special activities, the presence of a wide typology of accommodation units to recreate the natural environment of the tourist.

At the same time, an overview of the development strategy is needed that is tangent to the following strategic objectives: protecting the environment and natural resources, improving the economy, improving connectivity, providing public services and promoting efficiency, accessibility and sustainability, consistent with quality management and in line with technological progress.

Also, the success of the implementation of quality management in the tourism services sector, both in Transylvania and throughout the country can be given by building collaborative partnerships between researchers, local authorities, tourism shareholders and residents. Emphasis should be placed on monitoring project implementation; forming a common vision for development by consulting the agencies involved and residents; attention paid to the balanced distribution of the positive effects due to the development of tourism; the need for a complex policy to coordinate tourism activities and services.

Conclusions

Despite the lack of a unique recipe for implementing a plan for the quality improvement in tourism in the Transylvania region, it is necessary to apply a planning process based on the inclusion between the locals, authorities and business environment aimed at cultivating the tourist's interest but also maintaining the relationship with it.

Success by establishing a strong, well-structured management that has sufficient financial and human resources necessary for the action implies autonomy, responsibility and a mix generated by the relationship between public authorities, the private sector and the local population.

This study produced findings that are applicable to improving quality practices in the hotel industry in Transylvania, but also in Romania, and is based on official data provided by the National Institute of Statistics in Romania, as well as studies and research published in related journals. addressing quality and management in the tourism sector.

Tourism can serve as a factor for the development of the economic sector, which is why I put forward the following proposals: creating a strategy by analyzing the types of products and services characteristic of a certain area or region; defining the ways of action, as well as identifying the responsible actors; creating learning opportunities from specialists; creating institutions that come with optimal options for building new accommodation units, in accordance with quality and environmental standards.

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ENTREPRENEURIAL COMPETENCES IN THE TRAINING OF FUTURE TECHNICIANS IN ECONOMIC ACTIVITIES

**Victor-Marian Dumitrache¹, Iulian Gole², Petronela-Evelina Bălu³ and
Florentina-Olivia Bălu⁴**

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

⁴⁾ *University of Geneva, Switzerland*

E-mail: victor.dumitrache@gmail.com; E-mail: iuliangole@yahoo.com

E-mail: evelina.balu@yahoo.com; E-mail: olivia_balu@yahoo.fr

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Abstract

In 2014, the entrepreneurship education started to be one of the strategic directions of the EU policies in education. Since then, EU has been providing increasing support to national policy makers in education, to universities and schools so they can improve policies, curriculum and approaches in entrepreneurship education. Aligned with the new strategic direction, Entrepreneurial Competences Framework was launched in 2016, being, among others, a tool for analyzing the entrepreneurial orientation of various curricula. Using a research tool based on EntreComp, developed by one of the authors in 2018, the article aims to make an analysis of the current “Technician in Economic Activities” Professional Training Standard, EQF level 4, from Romania. Pointing out the gap between the Training Standard and EntreComp, we expect to create awareness among VET policy makers, so further amendments to the current Standard may take entrepreneurial competences into consideration.

Keywords

entrepreneurship, education, training standard, EntreComp

JEL Classification

A20, I25, P46

Introduction

Technology, globalization and the rise of automation and artificial intelligence are shaping the economy, especially the labor market. (WEF, 2018) A student that starts school this year will enter the labor market in mid-2030 and their career will last till 2060s. Since there is no model to predict the needs of our workforce in the coming years, we already know that they are changing and will be changing with the rate of technological advancement. (WEF, 2018)

In Romania there are 3.37 million youth aged 15 to 24 (Eurostat, 2018). Every year, 0.33 million young people reach 16 – the legal working age. Most of them will continue their studies; others will enter the labor market. What they discover is that the economy is not creating every year 0.33 million jobs fitting their qualification. They will discover a significant mismatch between the competences they have and the jobs that are available; the yesterday's valued competences do not match today's job market.

Moreover, Romania has the 4th highest NEETs (not in employment, education or training) rate in the EU (20.6% - Eurostat, 2018) caused particularly by the youth having no relevant qualifications and by those who are unskilled.

Keeping the curriculum up to date making the qualification relevant for the job market are two of the main challenges that the educational systems face nowadays.

The entrepreneurial education is one of the fundamental factors that can be used to approach and face the 21st Century challenges. The European Commission has been focusing on promoting the development of entrepreneurial competences from primary school through to university and assesses that the European Union, by exploiting the dynamism feature that the entrepreneurship has, could succeed in terms of competitiveness and economic growth challenges (Soare, 2016).

Additionally, in 2016, the Entrepreneurship Competence Framework (EntreComp) was elaborated by EU. EntreComp provide a tool for enhancing the entrepreneurial capacity of European citizens and organizations. The framework intends to put together or to have an unanimously accepted opinion regarding the entrepreneurship competence by defining 3 competence areas, a list of 15 competences, learning out-comes and proficiency levels, which current and future initiatives can refer to (EU, 2016). In conclusion, we might consider EntreComp like an additional support offered by the EU for the main players from society - public authorities and private actors – in order to customize their purposes and curriculum to the groups they work with (EU, 2016).

This research paper is the 3rd study which aims to analyze the gap between the aspects that are already being taught and those that should be taught in terms of entrepreneurship as a transversal competence. In the other two studies, the subjects of analysis were the bachelor's degree curriculum in *Engineering and Management* and the Professional Training Standard, EQF level 4, Agricultural Technician specialization. In both the them, EntreComp was the reference. Continuing their work and trying to provide as much input as possible for curriculum developers, the authors analyze this time the Professional Training Standard, EQF level 4, for Technician in Economic Activities.

EntreComp Framework

The need for redesigning the curriculum according to the entrepreneurial education principles comes from the broader definition of entrepreneurship given by EntreComp. It says that entrepreneurship is a transversal competence, not exclusively related to the business world. As a transversal competence, it can be implemented by citizens to all aspects of life - personal development, integration into the labor market - as an employee or as a self-employed person, as an entrepreneur or as an active member in cultural, social or commercial fields (EU, 2016). The model structures the entrepreneurial competences in 3 competences areas - Ideas & Opportunities, Resources and Into Action – each of them covering 5 competences. So, according to the model, there are 15 main entrepreneurial competencies in total.

Each competence is presented in 3 up to 6 threads or dimensions. Then, each thread is explained in dynamics on 8 levels of proficiency.

Professional training standard for Technician in economic activities

The training of the future technicians in economic activities (cashiers, accountants, exchange officers, fiscal agents etc.) is based on the *Technician in economic activities* Professional

Training Standard, EQF level 4, approved by OMENCS nr. 4121/13.06.2016. The Professional Training Standard is applied by all the VET teachers from the economic high schools when adapting the existent curriculum or when designing new one (for example in partnership with local companies).

According to the Standard, the learning process is modular, consisting of 14 Learning Results Units. For each Learning Results Unit, the Standard:

- describes the technical learning results in terms of knowledge (to know), abilities (to do) and attitudes (to be) that the student need the acquire for being considered qualified
- describes transversal learning results, also known as soft skills or transferable skills. They are related to each of the 8 Key Competences (EC, 2006). The entrepreneurial competence is one of the eight
- recommends learning resources that teachers and students may use to obtain the foreseen learning results
- presents the standard for assessment and the evaluation criteria to be used by teachers for measuring the learning results obtained by the students

The 14 Learning Results Units are the following: 1) Professional ethics and communication, 2) Applying basics of accounting, 3) Utilizing the accounting principles and methods, 4) Organizing the activity of economic units, 5) Products and service quality assurance, 6) Environment, consumer and employees protection, 7) Company's administration, 8) Assessing market opportunities, 9) Applying marketing policies, 10) Recording financial and economical operations, 11) Drawing up financial statements, 12) Applying negotiation and contracting techniques, 13) Using accounting software, 14) Applying statistic and financial procedures.

Regardless specialization, in all the Professional Training Standards for each learning result is allocated a 3 digits code under the format x.y.z where x represents the number of the learning results unit, y refers to the type of result (1 is for knowledge, 2 for abilities, 3 for attitudes) and z is calculating the number of results of a category under a specific learning results unit. For example, 8.2.6 Analyzing direct and indirect market competitors is the 6th in the list of abilities under the learning result number 8 Assessing market opportunities and 6.3.2 Following the professional ethics regarding consumer rights is the second attitude under learning results unit number 6 Environment, consumer and employees protection.

For the scope of the analysis, in the column 4 of the table no 1 were used only the codes.

The training standard analysis

Aiming to discover the gap between the Professional Training Standard – in terms of entrepreneurial competencies – and EntreComp, as in the previous two papers, we used two widespread research methods: *the analysis of the documents* and *the comparative analysis*. Apart from the fact that these two methods showed their effectiveness in the previous two research papers, we are continuing to use them because:

- they are more time-effective comparing to other quantitative methods that require more time for data gathering, so they are cost effective
- they are less time-consuming because they require data selection instead of data collection
- most of the documents are available on the Internet and they can be obtained without the author's approval (Bowen, 2009)

Synthetic description of the Table no. 1, no. 2 and no. 3 (table heading as in Dumitrache et al., 2018):

Column 1 shows the area of the EntreComp Framework

Column 2 shows the competence as in EntreComp Framework

Column 3 shows the hint mentioned in EntreComp for that specific competence

Column 4 matches the competences from the Professional Training Standard with the related Entrepreneurship Competences and their level of proficiency according to EntreComp.

By analyzing the data gathered on column 4 - the result of the comparative analysis - we can conclude about the extent in which the Professional Training Standard integrates the 15 entrepreneurial competences. Since each of the 15 competences is divided in threads, column 4 shows how a thread can be either uncovered or covered at different levels of proficiency by multiple competences from the Standard. For example, the thread called Manage resources, associated with Mobilizing resources competence, is covered by one competence from Learning Results Unit no. 4 (up to level 3) and by one competence from Learning Results Unit number 7 (up to level 4).

All these competences can be found under multiple learning results units.

Using an identical methodology and the same table heading, the authors have considered the bachelor's degree curriculum in *Engineering and Management* and the Professional Training Standard, EQF level 4, Agricultural Technician specialization.

Table no. 1 Curriculum analysis – 1st area “Ideas and opportunities”

Competences of EntreComp Framework (EU, 2016)			Level of each competency in the Professional Training Standard according to EntreComp Framework
Area	Competences	Hints	
1. Ideas and opportunities	1.1 Spotting opportunities	Use your imagination and abilities to identify opportunities for creating value	7.2.2 – L4 – Analyze the context 8.2.14 – L3 – Analyze the context
	1.2 Creativity	Develop creative and purposeful ideas	
	1.3 Vision	Work towards your vision of the future	9.2.6, 9.2.9 – L2 - Imagine
	1.4 Valuing ideas	Make the most of ideas and opportunities	
	1.5 Ethical and sustainable thinking	Assess the consequences and impact of ideas, opportunities and actions	1.2.23, 1.2.24, 1.3.16 – L3 – Behave ethically

Source: data from “Technician in Economic Activities” Professional Training Standard, processed by the authors. Table heading as in Dumitrache et al., 2018.

Out of the 5 competences from *Ideas and opportunities* area of EntreComp, 3 are addressed to some extent by the Professional Training Standard, as following:

Spotting Opportunities, which is the first entrepreneurial competence, is addressed by the Standard in 1 out of 4 threads: *Analyze the context* (L4). The 4 unaddressed threads are *Identify, create and seize opportunities*, *Focus on challenges*, *Uncover needs*.

The 2nd entrepreneurial competence – Creativity, is entirely unaddressed by the Standard. None of its 5 threads is covered: *Be curious and opened*, *Develop ideas*, *Define problems*, *Design value*, *Be innovative*.

Vision, the 3rd entrepreneurial competence, is addressed by the Standard only in one out of 3 threads: *Imagine* (L2). The other 2 threads are being unaddressed: *Think strategically* and *Guide actions*.

Like the 2nd one, the fourth competence within the Standard - Valuing ideas - is totally unaddressed. None of its 2 threads are addressed: *Recognize the value of ideas* and *Share and protect ideas*.

The fifth entrepreneurial competence, called Ethical and sustainable thinking, is addressed by the Standard in 1 of its 4 threads: *Behave ethically* (L3). The other 3 threads are not addressed at all: *Think sustainably*, *Assess impact* and *Be accountable*.

Only 4 out of the 18 threads under Ideas and opportunities area are addressed by the Standard.

Table no. 2 Curriculum analysis – 2nd area “Resources”

Competences of EntreComp Framework (EU, 2016)			Level of each competency in the Professional Training Standard according to EntreComp Framework
Area	Competences	Hints	
2. Resources	2.1 Self-awareness and self-efficacy	Believe in yourself and keep developing	7.2.8, 7.2.9, 7.3.7 – L3 – Shape your future
	2.2 Motivation and perseverance	Stay focused and don't give up	4.3.3, 4.3.4 – L2 – Be resilient
	2.3 Mobilizing resources	Gather and manage the resources you need	4.3.6 – L3 – Manage resources 7.2.10 – L4 – Manage resources
	2.4 Financial and economic literacy	Develop financial and economic know how	11.2.2 – L5 – Understanding economic and financial concepts 11.2.4 – L4 – Find funding 14.2.7 – L4 – Understanding taxation
	2.5 Mobilizing others	Inspire, enthuse and get others on board	1.3.6 – L3 - Persuade 1.2.7, 1.3.9 – L2 - Communicate effectively

Source: data from “Technician in Economic Activities” Professional Training Standard, processed by the authors. Table heading as in Dumitrache et al., 2018.

All the 5 competences from *Resources* area of EntreComp, are covered by the Professional Training Standard to some extent, as following:

The sixth entrepreneurial competence, named Self-awareness and self-efficacy is covered by the Standard in 1 of the 4 threads: *Shape your future* (L3). The other 3 threads are not covered at all: *Follow your aspirations*, *Identify your strengths and weaknesses* and *Believe in your ability*.

The seventh entrepreneurial competence, called Motivation and perseverance, is covered by the standard in 1 out of 5 threads: *Be resilient* (L2). The other 4 threads are not covered at all: *Stay driven*, *Be determined*, *Focus on what keeps you motivated* and *Don't give up*.

The eighth entrepreneurial competence, called Mobilizing resources, is covered by the Standard in 1 out of 4 threads: *Manage resources* (L4). The other 4 threads are not covered at all: *Use resources responsibly*, *Make the most out of your time* and *Get support*.

The ninth entrepreneurial competence, called Financial and economic literacy, is covered by the Standard in 3 out of 4 threads: *Understanding economic and financial concepts* (L5), *Find funding* (L4), *Understanding taxation* (L4). The only uncovered thread is *Budget*.

The tenth entrepreneurial competence, called Mobilizing others, is covered by the Standard in 2 of the 4 threads: *Persuade* (L3) and *Communicate effectively* (L2). The other 2 threads are not covered at all: *Inspire and get inspired* and *Use media effectively*.

Only 8 out of 21 threads under Resources area are covered by the Standard.

Table no. 3 Curriculum analysis – 3rd area “Into action”

Competences of EntreComp Framework (EU, 2016)			Level of each competency in the Professional Training Standard according to EntreComp Framework
Area	Competences	Hints	
3. Into action	3.1 Taking the initiative	Go for it	2.3.3 – L1 – Work independently 2.3.5 – L1 – Take responsibility 3.3.2, 3.3.3 – L1 – Take responsibility 4.3.4, 4.3.6 – L1 – Work independently 5.3.2 – L2 – Take responsibility 6.3.3, 6.3.6 – L1 – Take responsibility 7.3.2 – L1 – Take responsibility 8.3.3 – L1 – Take responsibility 11.3.2 – Take responsibility 13.3.4 – Take responsibility
	3.2 Planning and management	Prioritize, organize and follow-up	8.2.15 – L2 – Define goals 14.2.4 – L4 – Monitor your progress
	3.3 Coping with uncertainty	Make decisions dealing with uncertainty, ambiguity and risk	11.2.6 – L5 – Manage risk
	3.4 Working with others	Team up, collaborate and network	1.2.14, 1.3.10 – L4 – Develop emotional intelligence 4.3.8 – L1 – Team up 7.3.3, 7.3.5 – L1 – Team up 8.3.2, 8.3.5 – L1 – Team up 10.3.3 – L1 – Team up 11.3.3 – L1 – Team up
	3.5 Learning through experience	Learn by doing	

Source: data from “Technician in Economic Activities” Professional Training Standard, processed by the authors. Table heading as in Dumitrache et al., 2018.

Out the 5 competences under Into action area of EntreComp, 4 are covered by the Professional Training Standard to some extent, as following:

The eleventh entrepreneurial competence, called Taking the initiative, is covered by the Standard in 2 out of 3 threads: Work independently (L1) and Take responsibility (L1). The thread which is not covered at all is *Take action*.

The twelfth entrepreneurial competence, called Planning and management, is covered by the Standard in 2 out of 6 threads: *Define goals* (L2) and *Monitor your progress* (L4). The other 4 threads are not covered at all: *Plan and organize*, *Develop sustainable business plan*, *Define priorities* and *Be flexible and adapt to changes*.

The thirteenth entrepreneurial competence, called Coping with uncertainty, ambiguity and risk, is covered by the Standard in 1 out of 5 threads: *Manage risk* (L5). The other 2 threads are not covered at all: *Cope with uncertainty and ambiguity* and *Calculate risk*.

Working with others, which is the fourteenth entrepreneurial competence, is covered by the Standard in 2 out of 6 threads: *Develop emotional intelligence* (L4) and *Team up* (L1). The other 4 threads are not covered at all: *Accept diversity*, *Listen actively*, *Work together* and *Expand your network*.

The fifteenth entrepreneurial competence, called Learning through experience, is not covered at all by the standard, in all of its 3 threads: *Reflect*, *Learn to learn* and *Learn from experience*. Only 7 out of 23 threads under Into action area are covered by the Standard. Overall, out of the 15th competences of EntreComp, 12 are covered (or addressed) by the Standard in at least 1 thread. Breaking competences and going at threads' level, out of the 62 threads, only 19 are covered by the standard.

Conclusions

The research shows that the Professional Training Standard for Technician in Economic Activities specialization covers to some extent only 12 out of the 15 entrepreneurial competences identified through EntreComp – more specifically, only 19 out of the 62 threads of EntreComp have an correspondent knowledge, skill or attitude in the Standard.

We pointed out the gap between the Training Standard and EntreComp and we expect to create awareness among VET policy makers, so further amendments to the current Standard may take entrepreneurial competences into consideration especially now, as we know exactly which of them are part of the Standard and which are not. The uncovered competences and threads can be covered by revising the Standard. The added value of this paper is that it can be used as a reference for revising the current Standard.

The following research may also be focused on the effectiveness of the learning content and the methods applied in different teaching subjects, as well as on new approaches for enhancing the entrepreneurial learning effectiveness.

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TRANSITION TO A CIRCULAR ECONOMY - STRATEGIES AND PROGRESS

Gabriela Iuliana (Ganea) Paraschiv¹, Ștefania - Rodica (Anghel) Hubel² and Ana Maria Dumitrache (Șerbănescu)³

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

E-mail: gabriela.iuliana.ganea@gmail.com; E-mail: anghel.st77@yahoo.com ;

E-mail: a.mariadumitrache@yahoo.com

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Abstract

This article wants to highlight the importance of shifting from a global linear economy to a circular economy, given the level and fast diminution of availability of natural resources, the rapid deterioration of the quality of air as well as water and soil quality and of the impact upon natural ecosystems; at international level this type of concerns regarding the management of waste have acquired a dynamic character and a clear intent to identify the best solutions and technologies.

The concept of circular economy shows us, very concisely, that in order to harmonize the in a sustainable manner the development needs of mankind in the long term, it is necessary to optimize the consumption of resources so that we waste as little as possible and reuse as much as possible. Improving the use of resources must reach such a threshold that the net quantity of natural resources consumed does not jeopardize the rate of natural recovery, making sure that there are enough left for future generations.

The European Commission had defined the circular economy as being one where the aim is to prolong the value of products and materials and ensure economic prosperity by creating additional value through recycling and reusing.

To this end, the research for this paper aimed at promoting a systemic perspective of the circular economy, identifying the necessary steps to operationalize this concept, developing inter-industry value chains, highlighting synergistic aspects in relation to the green economy.

Keywords

Circular economy, necessity, strategies, progress.

JEL Classification

A10, D04, O13, Q01, Q53, Q58

Introduction

The circular economy is presented as an alternative to the so-called "linear" economy, which is currently dominant - less than 10% of material flows are currently closed (Wit et al., 2018) and which consists of extraction, production, consumption and dumping.

In fact, the circular economy is a system of production, exchange and consumption meant to optimize the use of resources at all stages of the life cycle of a good or service, according to a circular thinking, thus reducing the footprint on the environment and contributing to the well-being of individuals and communities (Institut EDDEC, n.d.).

The concept of circular economy involves taking into account elements such as the fact that resources are finite, the flow of materials at both at company and territory level as well as their potential to be reintegrated in the economic system, thus preventing their final state from being dumped. Still relatively young, the concept of circular economy brings together many scientific disciplines, but there is still no universal definition. However, all the existing definitions have in common the consideration of a circular logic and the efficiency of the use of resources through different strategies.

Regarding the negative impact of human activity on the environment, there is a global consensus, underlined by the activity of the international community that has adopted various measures such as the Paris Agreement - United Nations Framework Convention on Climate Change, the first global agreement with binding legal force, which aims to minimize the consequences of climate change in the medium and long term. Thus, several strategies were presented regarding potential solutions to the problem. However, given the impact and negative factors - the problems of environmental pollution, the limited existence of resources and the growth of the middle class, which in turn generates a global increase in consumption - an approach that is unsustainable and can be called into question.

Given the focus on the subject, there has been increased interest in recent years on the concept of circular economy that has been gaining momentum, especially in Europe and Asia – mostly in China and Japan. The circular economy model calls for a complete transformation of the business models, while at the same time aims to increase the efficiency in using resources, reducing the residual materials and certain potential derivatives.

It is estimated that the efficient use of resources could reduce, by 2030, raw material needs by 17% to 24% (Meyer, 2011). Prevention of waste generation, ecological design, reuse and other similar measures could generate net savings of up to 600 billion Euros, this amount representing 8% of the annual turnover of EU companies, while reducing by 2-4% the total annual greenhouse gas emissions

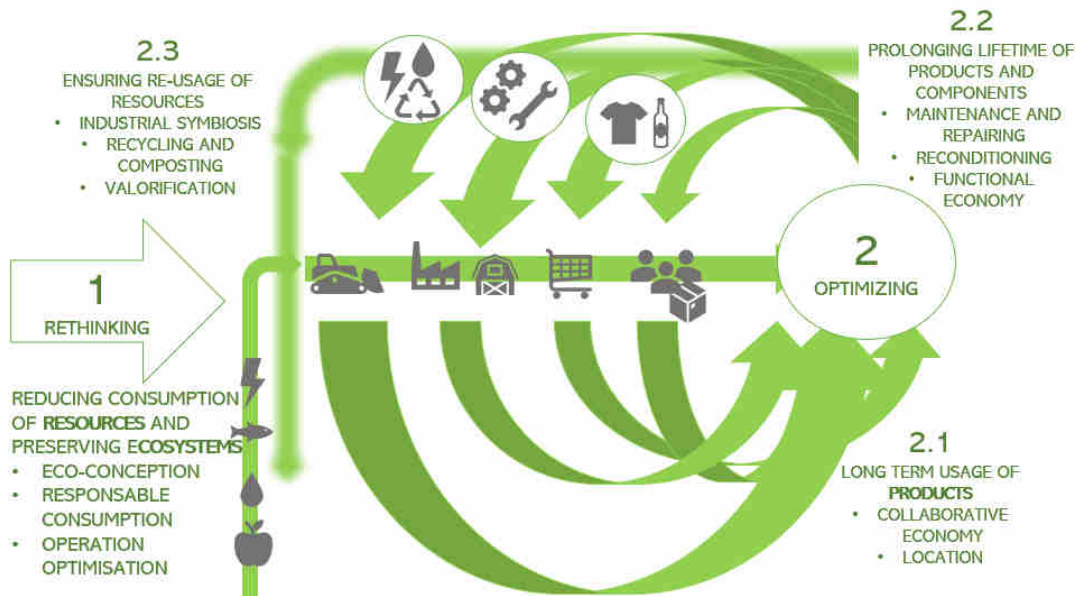


Fig. no. 1 Circular Economy

Source: EDDEC Institute, 2018 in collaboration with RECYC-QUEBEC

Strategies of the circular economy

The circular economy integrates various strategies and tools that are based, among other things, on three principles known for limiting the impact on the environment: reduction at source, reuse and recycling, commonly known as 3R.

These strategies and tools are integrated in all stages of the production process, be they upstream (eco-design), during production (industrial ecology), distribution (functional economy) or consumption (collaborative economy).

As the figure below illustrates, the circular economy is constantly integrating many existing tools and strategies, but in an isolated way.

The five strategies that we will consider in the following are: functional economy, collaborative economy, remanufacturing and reconditioning, industrial symbiosis and recycling.

1. Functional economy, also called performance economics, consists in selling the use of a product and not the product itself. Thus, this economy aims to optimize the use of goods and services with the objective to maximize their use for a long time using limited resources. This creates a sustainable space, considerably more dematerialized than the current economy focused on production. This leads to the decoupling of the added value and the consumption of energy and virgin raw materials and moves the aim towards maximizing the value created and ensuring the circularity of the materials, which represents an essential change of the business model for most companies and at the same time a major policy change at state level. Trying to explain the functional economy in simple words, it moves all systems from a finite linearity to a true natural system (such as that of water in nature), trying to emphasize the importance of the circularity of the elements so that it is necessary to understand in detail the elements that contribute or could contribute to the circularity of the system.

Globally, it is known that 20% of the population consumes 80% of resources, which in turn ensures a major impact in the transition to a functional economy of large states, as well as of multinational companies. The most obvious examples showcasing the complexity of moving from a linear economy to a functional one, as well as the profits generated by it, are

represented by the companies that are trying to extend from selling a product to a 360 type of service - the most common examples are those of Schindler and Xerox. Schindler sells 360 vertical transports instead of elevators, which means that it provides all the necessary services for the functionality, thus ensuring the diminution of necessary resources and ensuring those are being reused during several processes (production, maintenance, etc.) (Stahel, 2005)

2. Collaborative economics, also known as sharing economy, uses products and services to optimize resource consumption (Rizos, et al., 2017). This type of economy involves new forms of work and organization of exchange and is also the easiest to observe in everyday life. In general, for a predominant efficient collaborative economy there is a need to introduce a digital platform that allows consumers and producers to enter into direct contact and interchange their roles depending on the products and services offered.

In the last decade, the development of this economy has revolutionized many industries, the most popular being the transportation of people (the appearance of Uber and car-sharing applications), the hotel industry (the appearance of Airbnb), the retail industry (the emergence of e-commerce) through extended sales platforms like Amazon or EBay that allow anyone to become both seller and buyer.

The collaborative economy has registered annual growths of over 25% worldwide with countries such as China seeing an impact of more than 10%, US 20%, European Union 30% (Rinne, 2019), thus becoming an economic force in itself, estimated to exceed \$ 335 billion by 2025 in the US alone (Yaraghi and Ravi, 2017).

3. Reconditioning consists in the refurbishment of a product by disassembly, cleaning, inspection, sorting, reconditioning and reassembly. Reconditioning allows the components to be restored to their working state (Parkinson and Thompson, 2003; Lieder and Rashid, 2016). Over 70% of countries recognize the importance of ensuring a continuous flow of goods, including refurbishment and refurbishment, with a reconditioning rate estimated at around 15% globally. At the regional level, there are different measures which require to some extent the implementation of strategies aiming to obtain a faster transition to a higher percentage of reuse, yet the costs are still high when it comes to the implementation of such processes.

In the European Union there is a platform dedicated to the Circular Economy in which there is a section aiming at reconditioning with the aim of remodelling, where stakeholders can see actions taken by different companies with examples such as RepescaPlas - Spain announcing the recycling of marine waste into fuel for fishing boats. (2.5 tonnes of marine waste reused by mechanical filtration operations) or SINTEF - Norway announcing the possibility of recycling broken solar cells in silicon raw material having an impact in the electronics and metallurgical industry (Uniunea Europeana, 2019), these examples given by private companies are encouraged by national policies and laws that are more and more frequently observed in developed countries.

On the other hand, in the countries that are still developing, such as Romania, private companies are the engines that generate the refurbishment and the refurbishment, generally following the regional directions of the companies of which they belong, one of the most impactful measures was the introduction of packaging biodegradable and compostable together with the collection of household appliances for recast (Business Review , 2018).

The range of applicability and the extensions of this strategy are numerous and from day to day more and more options are observed as a result of the increase of investments at regional level, in the European Union alone, in 2014-2020 5.5 billion EURO (4% of the funds allocated allocated to the encouragement of the circular economy) were directed to support the reduction of waste, with the purpose of reusing and recycling them, followed by another 2.3 billion EURO allocated to the creation of ecological processes and the efficient use of resources, aiming to reduce the costs and create new opportunities in the medium and long term, to turn waste into a resource (Comisia Europeană, 2016)

4. Industrial symbiosis connects companies in the same industrial area. The residues or results from one business then become the raw material, or they are contributors the manufacturing processes of another. This exchange system is based mainly on, but not limited to, the geographical proximity (Erkwan, 2004; Institut Montaigne, 2016). In fact, «industrial symbiosis allows one company to benefit from the residues of another (products, heat, space, logistics, etc.), by selling them to a nearby company or their interchange as needed. This method reduces the costs of both parties while also involving benefits in terms of the resources involved and consumed, with a high potential for the environment » (Neves et al., 2019).

As far as countries' interest in the subject is concerned, China is the most advanced in the field, followed by the United States, United Kingdom and South Korea (Neves et al., 2019). This fact shows the influence of the production industries on the importance given to the industrial symbiosis. Proof of the increased interest in the subject is the emergence of industrial parks and especially those listed as environmentally friendly. In 2001, China already had 60 such parks, expressing a clear vision for this kind of strategy and considering it as fundamental to healthy economic growth.

The companies themselves have developed different ways to help each other, an example would be the Loop Company that helps reduce food waste by promoting fruits and vegetables considered unsuitable for sale in food stores, which are processed into juice and residual pulp and in turn used and incorporated into dog pies produced by their business partner Wilder & Harrier.

5. Recycling includes a set of operations to process the residual materials recovered at the end of the cycle in order to be re-introduced into a new production cycle (Agenția de mediu și managementul energiei, 2014; Lieder and Rashid, 2016).

These materials are reused either in closed loops - they are then reused in similar products - or in open loops, meaning the materials are used in other types of products.

The importance of recycling has perhaps the most traction from the press, given that it includes other strategies as well, and influenced also by the increase level of tangibility. Thus, we observe in the recent period events, documents and actions dedicated specifically to this area, such as the meetings of the European Parliament (EBCD, 2016) with NGOs and different players in the industry stressing the importance of the role of recycling in the circular economy, highlighting in turn the amount of potentially recyclable materials and the impact of their recycling, both in terms of the use of new resources and in the production costs of the recycled items. Similar meetings like this are held regionally in both the US and Asia, with the ultimate goal of creating policies that facilitates and accelerates recycling.

The importance of this area is also given by the size of the industry itself which registers growth year on year starting at \$ 265 billion in 2017 and estimated to reach \$ 377 billion by 2024 (Statista, 2019).

Conclusions

More and more countries are turning to the circular economy to mitigate the impact of human activity on the environment. To this end, various governmental authorities as well as companies create various strategies that aim to encourage and facilitate the transition to a circular economy, some of which have been highlighted in this article.

The transition to the circular economy does not mean a decrease in economic activity, but on the contrary, an optimization of the use of resources in order to reduce the impact on the environment and to use the resources more efficiently so as to ensure a maximization of the utilization rate of the resources. This in turn should encourage not only the development of new products, but also the development of new markets.

However, companies are called upon to rethink their business model and methods of production, which can raise difficulties in terms of speed in adopting strategies that lead to a circular economy, so a gradual and long-term transition is needed ensuring there are benefits

being generated, so that the continuation of the implementation of identified measures can be secured.

From the point of view of the sectors, as highlighted in the article, almost any sector has a high potential for high circulation, and those identified in the context of this study were mainly based on a review of international literature. A good understanding of the specific characteristics of each local authority will facilitate the choice of strategies and sectors to focus on. The main impediment is still that the circular economy is only very little known to the players on the market (companies, customers, legislators, etc.), so it is still necessary to create extensive awareness campaigns, specific training programs to ensure that the same actors are participants at the transition to a circular economy.

This transition to a circular economy should be accompanied by aid programs, incentives, appropriate taxation and favourable legislation so that it can be fully implemented and able to stimulate both public and private investment. An advantage in this direction is that highly developed countries already have policies in place that specialize in different areas, so that they can serve as inspiration for future initiatives in less developed or non-developed countries. This economic model has proven to have a great entrepreneurial potential, as it can contribute to gains in productivity, efficiency and profitability, in addition to stimulating the research for innovation.

The use of the circular economy in business models and processes, in order to gain momentum, should therefore be able to rely on the development of strategies, analysis tools, financial and regulatory solutions that enable the identification of the flow of materials with potential, as well as to find new uses and selling power for them.

Without being quantified, an advantage of recycling and capitalization would be to reduce the sensitivity of companies to the change in prices of virgin raw materials. This variation represents a risk to the sustainability of the enterprises, and a better use of the resources would surely contribute to ensuring their future access to the resources they need. (Institut Montaigne, 2016) (Rebaud, 2017)

Waste and resource usage are minimized, and when a product reaches the end of its life, it is used again to create additional value. This can bring major economic benefits, contributing to innovation, growth and job creation.

The circular economy offers an opportunity to stimulate the economy, making it more sustainable and competitive in the long run. It will reduce costs for European industries, lead to investments, create a level playing field.

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URBAN AGGLOMERATIONS IN THE PERSPECTIVE OF SUSTAINABLE TOURISM DEVELOPMENT - STRATEGY AND FINANCING POSSIBILITIES

Ștefania - Rodica (Anghel) Hubel¹, Gabriela Iuliana (Ganea) Paraschiv²
and Panait Anghel³

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

³⁾ *„Ovidius” University of Constanta, Romania*

E-mail: anghel.st77@yahoo.com; E-mail: gabriela.iuliana.ganea@gmail.com;

E-mail: anghel.panait@yahoo.com

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Abstract

This article highlights the contribution of Local Action Groups and Metropolitan Areas in supporting economic development in large urban agglomerations, with reference to the financing of existing project portfolios at the level of local communities, offering solutions to stakeholders interested in improving the quality of life and tourism services. For each of the two associative structures set up around Constanta we have highlighted their identities, the role of local communities in the territory where they are placed, the importance of strategy for local development in setting up portfolios of projects and financial options for those. We also presented the financing plans and lines that support the development and modernization of both the rural and the urban infrastructure.

This article complements the studies conducted on urban areas with a point of view regarding the interference of local development strategies in their territory, with reference to two types of entities: Metropolitan Area and Local Action Groups, concentrated around Constanta. The analysis performed in the context of the literature is a new perspective, which offers the possibility of generating a portfolio of development projects in urban areas, with multiple financing possibilities (national, European, international) and on different axes. The strictly technical documentation covers a topic known by authors who had the opportunity to work in the field and who used the most recent and original data known in the period 2012-2019.

Keywords

Urban agglomeration, Metropolitan Area, Local Action Group, strategy, sustainable development, financing

JEL Classification

L83, Z32

Introduction

In the context of global development and the effervescence of the changes that have taken place in all areas, in the economic sphere, the problem of the convergence of actions from the level of local communities, regional structures and national entities is raised, in order to reach the goals of sustainable development synthesized in social harmony, economic, average. Urban agglomerations are an increasingly important reality worldwide, because the quality of actions in the development of the urban environment is the engine of development in their neighboring area, in smaller localities.

Urban agglomerations, concept and features

We thus reach a broad discussion on sustainable development in urban agglomerations, a synthesis of the needs at their level, the exploitation of existing resources from a geographical, human and economic point of view. In the study of human settlements, an urban agglomeration is defined as an urban concentration formed by a large city and the surrounding area that gravitates towards it, including other cities, smaller, but also villages, which show a great dependence. (Profiroiu, 2008)

Due to the continuous demographic and functional growth, cities expand territorially and increase their influence around, some imposing themselves in particular. As a result, urban agglomerations come to life, they influence and polarize the economic-social activity of a certain region, in some cases their sphere of influence in the territory encountering other similar centers.

European strategy in the development of urban agglomerations

Beyond this influence we see two types of organizational structures that can contribute to the achievement of the goals of these agglomerations, one from the perspective of the Europe 2030 Strategy and the European Economic and Social Committee and another from the point of view of the Leader strategy at the governmental level, in the current period and destination. These are the Metropolitan Areas and Local Action Groups established as associative structures, based on the existing localities, in these urban agglomerations.

That is why we present both actors on the stage of local administrative development with several examples, which highlight their advantages and their importance. Of the 80 urban agglomerations in Europe, we present only the representative ones, namely the first 10 (table no. 1), whose characteristics we will analyze and which will constitute successful examples for the urban agglomeration around the city of Constanta.

It has a Metropolitan Area and four local action groups concentrated around it, as follows: Central Dobrogea, North Constanta, Constanta Center and Black Sea Danube Canal.

Table no. 1: The structure of the most important urban agglomerations in Europe

Position	The name of the urban agglomeration	The country	Population of urban agglomeration	Population of the city
1	Moscow	Russia	14.744.150	10.425.075 (2006)
2	Istanbul	Turkey	13.179.865	11.372.613 (2007)
3	London	UK	13.063.441	7.517.700 (2005)
4	Paris	France	11.818.503	2.153.600 (2005)
5	Barcelona	Spain	4.959.864	1.605.602 (2006)
6	St. Petersburg	Russia	4.820.815	4.580.620 (2006)

7	Milan	Italy	4.303.403	1.308.735 (2006)
8	Berlin	Germany	4.040.690	3.395.189 (2005)
9	Rome	Italy	3.858.111	2.547.677 (2006)
10	Athens	Greece	3.829.018	745.514 (2001)

Source: from Wikipedia, free encyclopedia

From the previous presentation we notice that there are also big differences between the cities around which this development takes place such as London, Paris, Barcelona, Moscow, the Hamburg metropolitan area where the spread of the development has led to the inclusion of the small cities in the surrounding rural area which may include an important area around the European metropolises.

The metropolitan areas and urban regions in the Europe 2030 Strategy, in the vision of the European Economic and Social Committee, are represented by a large city or a polycentric group of cities that also include smaller cities with a critical mass of at least 500,000 inhabitants (www.ZMC.ro). The role of the Metropolitan Area is to form important economic areas and labor force markets, being different entities from provinces, districts.

There are currently fragmented approaches that should be replaced by a coherent and progressive urban policy in the perspective of 2050. We should have a paradigm shift in favor of the Metropolitan Area and urban regions as a result of globalization, which is characterized by the creation of networks and value chains internationally, as well as the transformation and restructuring of industrial regions into regions with a manufacturing industry and a specialization of cities as bases of clusters that attract investment.

Important is the proximity of universities, research centers, international connectivity in parallel with internal mobility and intelligent transport systems. We are talking today about the green city that is responding to climate change, which is protecting the environment and promoting low energy consumption, which requires better and more careful local administration, as well as public-private partnerships.

Better interaction between urban and rural areas is necessary so that the quality of work at all levels of society is supported by an education and appropriate schooling systems so that we can talk about sustainable development in the field of tourism and related ones.

Effective governance of metropolitan areas and cities must be based on a combination of bottom-up and top-down approaches, ensuring the involvement of all stakeholders and the results will be achieved when all the social levels involved have adopted this concept. It is a multilevel governance, where the interaction between the decision-making process and the implementation is immediately apparent. Any measure taken in support of the strategy at the level of the associative entity must be corrected in real time according to the effects produced based on a recurring evaluation.

A characteristic of the regional development in Romania is given by the LOCAL ACTION GROUPS (LAGs) which doubles the financing possibilities in the urban agglomerations or part of them.

Sustainable development is a priority of both the intervention at the Metropolitan Area level and the intervention of the LAGs in the local development. From this perspective, they aim to balance the three dimensions of sustainable development: economic, social and environmental. To the obvious question about the purpose we have in promoting sustainable development, the answer is that the current generations in the local communities in these rural areas can cover their social, economic and environmental needs so as not to compromise the capacity of future generations in supporting and meeting their own needs.

The most active actors in rural and urban areas are:

- Professional associations

- Local political representatives
- Providers of cultural and community services
- Media
- Citizens

LAGs can support sustainable development in rural areas because they complement the existing human resources in both the public and private sectors with the financial resources in the two fields (<https://www.galdc.ro/docs/GAL-INFLUENTA-TURISMULUI-RURAL>). These are superiorly exploited through the intervention of the civic sector and the use of the conscious volunteering necessary to reach the objectives.

The sustainable development of tourism is directly linked to the increase of the quality of life in the rural area and conditioned by a better infrastructure, represented by good quality roads, water and sewerage networks, schools and kindergartens equipped with European standards (Dorobanțu, Gheorghe and Nistoreanu, 2012). The local authorities on the territory of the LAG need high-performance equipment for carrying out the activity of local administrative management. At the same time, authorized natural persons, individual companies, companies that, through the services provided, contribute to the improvement of life in the local communities, as well as to increasing the tourist attraction of the localities, will be carried out on its territory. where they support their investments.

The better the economic environment, the lower the number of unemployed, and the adequately qualified workforce responds better to the demands of the labor market and services. The quality of life is not in itself, it is directly proportional to the needs of the citizens.

Both the Metropolitan Area and the LAGs in the vicinity of Constanta Municipality, through integrated local development strategies, represent active organizational structures that contribute to achieving the objectives of sustainable tourism development in the vicinity of the Black Sea. Constanța metropolitan area is a Metropolitan Area which brings together 14 localities, of which 6 cities and 8 communes: Constanta county residence, Navodari, a touristic city in the burst of development, Ovidiu, city on the shore of Lake Siutghiol, Techirghiol and Eforie, cities with spa potential, as well as communes Mihail Kogalniceanu, Lumina, Cumpăna, Agigea and Valu lui Traian, placed right next to the entrance of Constanta similarly to Corbu and Poarta Alba.

The Constanta Metropolitan Area hosts 71% of the county's population, 500,000 inhabitants out of the total 700,000 inhabitants of Constanta County, on an area that accounts for 30% of the administrative territory of Constanta, respectively 1,014 km² (www.ZMC.ro). It is important to consider at this time the financing lines that can be accessed from the EU programs.

Two of the LAGs have in common with the Metropolitan Area, 6 localities, as follows:

- Constanta Center: Lumina and M. Kogalniceanu
- Black Sea Danube Channel: Cumpăna, Poarta Alba, Valu lui Traian and Agigea (www.madr.ro/axa-leader/leader-2014-2020). They total 130,794 inhabitants and an area of 3,355 km². The localities in both structures benefit from the financing lines valid for both the urban area and the rural area.

Competitiveness was identified as one of the five challenges regarding the development of Romania, underlining the need to improve the capacity of innovation and research for the development of products, services, businesses, processes and social models. Equally, the business environment will be improved, through the implementation of large-scale value chains and the creation of links inside and outside the country.

The portfolios of projects resulting from the development of local development strategies, both for the Constanta Metropolitan Area and for the Local Action Groups around Constanța, can be supported through the European funding programs: ERDF (European Regional

Development Fund), ESF (European Social Fund), EAFRD (European Agricultural Fund for Rural Development).

The Operational Competitiveness Program (POC), which is supported by the ERDF, responds, first of all, to the development challenge *Competitiveness and Local Development* described within the PA and complementary, it contributes to the achievement of the objectives of three other development challenges, namely: People and society, Infrastructure and Administration and government, thus allowing horizontal interventions in economy and society. The program operates through two vectors - Research, Development, Innovation (RDI) and Information and Communication Technology (ICT) - and contributes to achieving Romania's objectives in these areas in accordance with the Europe 2020 Strategy: a European strategy for smart growth, sustainable and inclusive.

Through its interventions, the program contributes to increasing competitiveness and economic development by improving access, security and use of ICT and by strengthening the RDI. At the same time, the POC contributes, indirectly, to the reform of areas such as education, health and culture, but also to social inclusion or poverty reduction.

ERDF focuses its investments on several key priority areas. This approach is known as "thematic concentration":

- Innovation and research;
- Digital agenda;
- Support for small and medium-sized enterprises (SMEs);
- Low carbon economy (Oprea, 2009).

The ERDF resources allocated to these priorities depend on the category of the region. In the more developed regions, at least 80% of the funds must focus on at least two of these priorities. In the transition regions, the concentration is 60% of the funds, and in the less developed regions, the share is 50%. In addition, some ERDF resources need to be channeled specifically to projects related to a low carbon economy:

- The most developed regions: 20%;
- Transition regions: 15%;
- Less developed regions: 12%.

During this period, the ESF grants funding of approximately EUR 80 billion (at current prices) for:

- for professional conversion
- solving the problem of equal opportunities and social inclusion
- to raise the level of education and to diversify the fields in vocational training, in order to respond to the current realities
- improve the quality of public services, from local to governmental level.

Strategy and budget The ESFs are jointly negotiated and agreed by the governments of the Member States, the European Parliament and the Commission. 7-year operational programs are planned by governments and approved by the European Commission (Sofi, 2009). They have access to financing from a wide range of organizations - public bodies, private companies and civil society - that concretely help people find work or keep their jobs.

The European Union Solidarity Fund (EUSF) is the main tool available to the EU to deal with major natural disasters and to show solidarity with disaster-stricken regions in Europe. Austria, Italy and Romania benefit from a support of EUR 293.5 million.

The fund was created in response to the devastating floods that hit Central Europe in the summer of 2002. Since then, it has been used in the case of 80 disasters of various types: floods, forest fires, earthquakes, storms and drought. So far, 24 different European countries have been supported, the total amount allocated exceeding 5 billion euros. In the current context of the crisis generated by the COVID-19 pandemic, the European Commission has reallocated funds for the affected states, including Romania.

EAFRD through the National Program for Rural Development 2014-2020, with a financing of over 8 billion EURO, supports the sustainable development of tourism in the rural area, through measures:

7.2-Investments in the creation and modernization of the basic infrastructure on a small scale - the rural infrastructure,

7.6-Investments associated with the protection of cultural heritage,

6.4-Investments in the creation and development of non-agricultural activities (www.afir.info.ro).

All these measures generate the modernization of life in the rural area and increase the attractiveness of these localities in terms of access to good quality tourist services.

Conclusions

Sustainable development requires the use of financing solutions for projects of local authorities, as well as for the business environment, both from the perspective of the National Rural Development Program, supported by an EAFRD grant, as well as on the line of the Regional Operational Program, which receives funding from the ERDF. The public-private partnership is still very important, because it comes to solve problems wherever they might appear in local communities and also offers the possibility of finding solutions for the three factors: economic, social and environmental.

It is all about the administrative decision, the political will, the institutional collaboration, the right analysis and the identification of the real problems that give us the possibility to take measures in order to increase the quality of life in the East of Romania, here where the dominant activity is spa tourism which is seasonal.

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RISKS AND OPPORTUNITIES OF DIGITAL PLATFORMS FOR SCALING BUSINESS MODELS

Pablo Valentin Weiss¹ and Benjamin Grab²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: pablo.weiss@gmx.de; E-mail: benny_grab@hotmail.com

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Abstract

Digital platforms are constantly changing and revolutionizing the business landscape in numerous aspects. The economic characteristics of digital platforms are the systematic capture and analysis of data and as a consequence the network effect. Digital platforms are flexible concepts which are constantly developing and adapting to the dynamics of markets with exponential growth. Compared to companies who have their roots in the old economy, those digital platforms can be regarded in two aspects. On the one hand, it can be seen as a risk, where the digital platforms are taking over market shares and generate monopolistic conditions. Furthermore, they are more often still perceived as a complete disruption of the traditional way of business. On the other hand, it can be seen as an opportunity to scale their existing business or even generate new business models. The challenges for companies implementing a digital platform as a business case are investigated upon highlighting on the opportunities and risks that accompany corporations in the conversion. In a desk research the roles of digital platforms and the market entry strategies build the theoretical framework. The paper elaborates the most significant risks and opportunities maintaining digital platforms. The research results are part of a comprehensive research project on business management and digital platforms developed as part of doctoral research at the Bucharest University of Economic Studies.

Keywords

digital platforms, digital transformation, scaling business, business model innovation, disruption

JEL Classification

L12, L14, M13, M16, O14

Introduction

Companies have possibilities to scale their business in various ways and in four different segments such as people, strategy, business operations finance. The range of possibilities

starts with an increase in personnel or to improve or disrupt the business strategy. Another possibility is to optimize processes, invest in mergers, or to grow organically. Last but not least, the change or enhancement of the existing business model allows companies to scale their ventures. In this paper, the focus is on the potential scaling of businesses by implementing or maintaining digital platforms. The digital platforms are changing the business landscape and have enormous effects on the markets and the might of those platforms are demonstrated by the GAFA (Google, Amazon, Facebook and Apple) monopoly. The economic specificity of digital platforms is the systematic collection and evaluation of data and its associated network effects. Still, there is no generally accepted and recognized definition given by their great diversity. There are different perspectives on digital platforms, such as the impact of digital platforms on society (Chan and Ghose, 2014), the governance of digital platforms (Boudreau, K., 2010), platform-based ecosystems (Jha, S. K. et al., 2016) and the adoption of platform strategies (Hagiu and Wright, 2015). The demarcation in this presented paper is the focus towards the opportunities and risks accompanied using digital platforms to scale business.

In practice, digital platforms are characterized by their enormous diversity, ranging from social networks, comparison and evaluation portals, search engines, sharing platforms, to online marketplaces (BMW, 2016). In this listing, the wide range of possibilities using digital platforms to generate business opportunities is demonstrated. By that diversity and range of business options one could state that there are a lot of opportunities with digital platforms to scale businesses. Contrary to that, implementing and maintaining a digital platform can also lead to risks. In times where discussions about digital transformation of businesses as a necessary strategy to respond to the future challenges in global business for enterprises are omnipresent, still there is action required in many corporations.

Research Methodology

The authors processed a descriptive research method in order to summarize their research objective. Information was gathered from numerous sources of secondary literature, mainly specialist books and articles from the domain of information technology, management and digital transformation. Furthermore, an inductive approach was applied with the aim to draw a conclusion on the opportunities and risks in implementing digital platforms in order to scale business. Furthermore, the results of the desk study contain important findings on the influence and effects of digital platforms to be considered when fundamentally disrupting and scaling business.

Theoretical Framework

Digital platforms contain a bunch of attributes which induce companies to implement these in their business model in order enable corporations to scale their businesses. The advantages of digital platforms are found in contributions to reduce transaction costs, facilitate an easier distribution of products and services, reduce complexity for customers' search as they integrate information of multiple sources by integration of intermediary agents and lower the monitoring costs for the corporations (Pagani, 2013 and Kankanhalli et al., 2018). Also, digital platforms are a tool to organize and coordinate the development of supplemental products by using modular and governance structures (Tiwana et al., 2010 and Boudreau, K., 2010).

Changing from traditional companies with linear chains of economic value added to highly networked digital platform eco-systems precedes to complex correlations of producers, users, and eco-system partners within digital platforms (Jaekel, 2017). Other than in traditional businesses Porters Five Forces of competition (Porter, 1980) are still valid in digital platforms but the forces are applying differently and add new factors to it. For example, digital platforms

generate added value for their users with resources that do not belong to them and which they are not capable of to control – for example AirBnB (Jaekel, 2017; Grab et al., 2018).

The roles of digital platforms

Digital platforms have the potential to scale businesses exponentially in terms of innovation, value creation and productivity. Economically, digital platforms are an enormous growth engine when applied in correct manner. The roles of digital platforms are summarized in the following table.

Table no. 1 roles of digital platforms

Innovation driver	Generation of customer benefits	Reduction of transaction costs	Market developer	Guarantee of welfare effects
Business model innovation	Convenience	Reduction of information, communication, negotiation and logistics costs	Supply/demand aggregation	Overcoming market frictions
Tailor-made products and services	Broader range	risk mitigation	Improved market entry of SMEs	Increased allocative efficiency
Novel product combinations / bundles	Greater market and price transparency	Making production more flexible	Global export opportunities	exploitation of technology
Flexible organization models	Sharing of resources/assets	-	Sales optimization	standardization

Source: own illustration based upon Berger, R. & Internet Economy Foundation 2016. *Fair Play in der digitalen Welt*, available at: https://www.ie.foundation/content/4publications/rb_cop_16_011_ief_plattformstudie_de_online.pdf

In summary, the weighting and effect of the five roles and its properties differentiates itself in every unique digital platform. The contribution to a possible scaling of business is very dependent on the business model and the appeal to the market. Nevertheless, digital platforms enable the corporations to channel the market in more perspectives than other business approaches.

Market entry strategies

In order to establish successfully on the market, digital platforms have to solve the supply and demand market. According to Parker, G. et al. 2016 there exist eight proven market entry strategies for digital platforms which are referenced and described on basis of Parker, et al. 2016 and Berger & Internet Economy Foundation 2016:

- Follow the rabbit: The functionality of business model has to be proven on a one-sided market first
 - Piggybacking: User base adaption of another platform
 - Seeding: Creation of relevant value units in advance which convince the users and stimulate the market
 - Marquee: Incentivation of the participation of particularly important users
 - Single-side: initially concentrate the acquisition on one market side or user group
 - Producer evangelism: Enabling of the supply side to bring in its own customer base
 - Big bang: Generate maximum attention for the launch day or ramp-up through push marketing

- Micromarket: Establishment in an existing community

The market entry strategy of digital platform has to be chosen carefully as every single of these eight approaches can have a limiting factor on the business models.

Research Contribution

Risks and opportunities of digital platforms

During the desk research a thorough investigation on the risks and opportunities the main findings are demonstrated in the following table and will be explained afterwards.

Table no. 2 Risks and opportunities of digital platforms

Risks	opportunities
Loss of customer access	Increase in turnover
Reaching the critical mass (Hoffmann, R., 2016) (Walter, M., 2016)	Market access / Access to new market segments (Evans, P. & Gawner, A., 2016)
Monopolisation	New market services
Internal resistors (Van Alstyne, M.W., 2016) (Baums, A. et al., 2015) (Evans, P. & Gawner, A., 2016)	Focus on the core business
Disruption	Collect customer data
Interchangeability (Van Alstyne, M.W., 2016)	Exploiting network effects (Baums, A. et al., 2015)
Margin Loss	Reduction of transaction costs
Data sovereignty loss (Baums, A. et al., 2015)	Increasing innovative capacity (Baums, A. et al., 2015)
Non-uniform interfaces (Sarkar, P., 2015)	Diminish insecurity (Van Alstyne, M.W., 2016)

Source: own illustration based upon Drewel, M., et al. 2017. Erfolgsgarant digitale Plattform – Vorreiter Landwirtschaft, [online], available at https://www.researchgate.net/publication/329626636_Erfolgsgarant_digitale_Plattform_-_Vorreiter_Landwirtschaft,

Analyzing the risks of digital platforms in order to scale business, there were mainly nine findings. The loss of customer access has its reason justified in the fact that suppliers from outside the industry appear as intermediaries between provider and the customer and build new value creation structures and as a result loosen the bond and the direct exchange with the customer (Baums et al., 2015). In case the digital platform reaches a critical mass by an increase in demand caused by more consumers, it could occur that the platform will attract further producers leading to a pull of more consumers and as a consequence generate growth. (Hoffmann, 2016, Walter, 2016) The risk emerges in case the critical mass is not reached and the growth spiral is not leading to the desired effects. The monopolization as seen e.g. with the GAFA-monopol demonstrates clearly the scaling effects concerning growth rates. But, for smaller enterprises where the core business model is not originally designed for a platform

business, the intermediaries could displace them. Furthermore, internal resistors against platform activities, such as maximizing the value of the ecosystem causing the withdrawal of customer groups in order to win substitute customers, are potential risks when the change is not accepted by the workforces (Van Alstyne, 2016, Baums, A. et al., 2015, Evans and Gawner, 2016). In addition, a disruption of the former markets leads towards risks in the event if the intermediaries succeed in targeting end users through their sovereignty over data to replace the producers. This causes interchangeability for the producers and also the danger that performances are more transparent and easier to compare (Van Alstyne, 2016). A further risk is the loss of margins due to the fact that the operator is participating monetarily on the transaction. Moreover, the producer or seller of a product learns about a data sovereignty loss as the data is in the possession of the digital platform owner (Baums et al., 2015). Last but not least, non-uniform interfaces can lead to a complete failure of or faulty data exchange and in the end cost money. (Sarkar, 2015). In summary the main findings in the risk evaluation is, that platforms can slide between the classical actors in the markets, mainly between the producers or sellers and the customers and regulate the rules. This either puts a lot of pressure on existing business models of the corporations resulting in being exchangeable or worse, they are ruled out.

Contrary to the risks, also opportunities must be reflected and identified upon in the handling of digital platforms. It is clear, that in the application of digital platforms, certain services can be scaled up and lead to a rapid growth with the effect of sales growth. Also, market entries are simplified for companies equipping with a gain in access to new markets and market segments they were not present before. Corporations can also use digital platforms to offer new market services for existing products, for example predictive maintenance. Another opportunity for enterprises is to use a digital platform to sell their products and to add value for customers in case business partners enhance their own products so they can focus on their core competencies. The collection of data on platforms provides and enable their owners to analyze customer data in real time allows many conclusions to be drawn about customer needs and thereby improve the offer. Another opportunity is the exploitation of network effects which generate rapid growth on short notice and established as a standard. In addition to that, digital platforms are easy to operate and accessible as a place of exchange with the effect to reduce the transaction costs.

Finally, digital platforms can be used to diminish insecurities as all the actors can be evaluated transparently (Van Alstyne, 2016). The companies can use this for marketing purposes as well as for customer retention.

Conclusions

As part of a digital transformation in companies, the consideration of implementing a digital platform and thus, the benefit of the scaling effects in business can be outlined a smart choice. Nevertheless, the corporations must expose themselves with the risks and opportunities accompanied by platforms. The intermediary character of platforms which have excessive market power could be circumvented by an own platform. Here the decisive success factor is the resonance in the market. Generally, the research in the field joining forces in the standardization and legal aspects concerning the usage of digital platforms is still unsettled and needs further research.

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EMAIL SUBJECT LINES ANALYSIS FOR HIGH OPEN RATE IN EMAIL MARKETING

Codrin Teiu¹

¹“Alexandru Ioan Cuza” University of Iasi, Romania

E-mail: codrin.teiu@gmail.com

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Abstract

Email marketing is an important channel for online sales. Millions of emails are being sent daily by companies looking to promote and sell their products and services. Out of all these emails only a small part is being opened, but still companies keep on using this channel for its good reach to customers who are most often taking the email with them everywhere because of the widespread use of mobile phones. This paper is looking to study the behavior of email recipients of a large UK telecom company which sent a large volume of marketing related emails in 2019. We are looking to gauge the success of the subject lines of these emails by taking email open rate as an indicator and then determine a series of best practices and common traits by analyzing the best performing subject lines.

Keywords

email marketing, email subject line, email open.

JEL Classification

M3, M37

Introduction

Email marketing is a popular method for companies to contact prospects. This channel is also one of the most cost efficient channels of marketing communications (Dawe, 2015) and this is why many business-to-business (B2B) marketers are relying on email as a foundational piece for their sales strategy. Still, nowadays the quantity of emails that a person receives can be overwhelming and recipients are prioritizing some emails over others, while many of them remain unopened altogether. In prioritizing the emails that they read, besides looking at the sender who should be a known entity that has the right to contact the person for marketing purpose, recipients are looking first at the subject line of the emails. This is the communication that they see first and a big factor in whether that email will be opened or not. Moving forward from here, the personal utility of the message takes over the prioritization process (Wainer , et al., 2011).

Email marketing, in comparison with direct mail, has the ability to capture prospect information and interest via gated landing pages where the prospect can submit a form to request more information, to register for an event or to ask to be contacted, out of many other possibilities. The days of standalone marketing campaigns done via email are long gone, but part of an integrated multi-channel marketing campaign email is still worth the investment. Recent data privacy regulations related to email communications for sales have made the email marketing environment more secure and email subscribers feel protected from being contacted without permission. In business to business communications and sales it is mandatory to obtain permission from prospects to be contacted by email for marketing purpose.

Review of the scientific literature

The number of email communications sent each day is large and growing year after year. The technology research organization The Radicati Group has estimated the number of worldwide email users in 2019 at over 2.9 B (billion), which is over one third of the world population. The number of email communications sent per day in 2019 are calculated at 246.5 B emails, out of which 128.8 B emails per day are accounted for as business emails. The average consumer worldwide received 96 emails per day in the year 2019 (The Radicati Group, 2019). Email has a series of characteristics that make it a very business to business competitive tool for marketing: it is targetable (specific individuals can easily be targeted by doing database segmentation on various criteria), is highly customizable and open for personalization depending on the recipient, has high flexibility as a tool and low commitment needed to run email campaigns (Baggott, 2007).

Other widespread tools like telemarketing or direct mail have high costs to run which meant that large companies had little competition from smaller companies that wanted to enter their market. Email marketing has started to allow this smaller companies to have access to a potent marketing tool to compete with larger companies.

Besides these points an important factor to consider is that nearly everyone uses email as it is a needed tool for both professional and personal use. In comparison to other media, the engagement rates of email are consistently high which makes it a tool with good reach at an affordable cost (Baggott, 2007). It is true that a part of all emails sent are marked as spam (undesirable communication) by recipients, most often in cases of bought email lists where permission to be emailed was obtained through a third party (for example you agree to receive marketing communication from your cable company by they are also sharing contacts with other partner companies) or marketers not doing a proper job in targeting prospects.

Email is often used as a tool in research, many times researchers sending solicitations to participate in a web-based survey (Sappleton & Lourenco, 2015). When this type of communications are being sent, similarly to sales emails, senders are looking to improve the response rate. This process starts with having the contacts read the actual email and the subject line plays a major role in this process. Similarly to phone sales and direct mail sales, the subject line is the opening statement and it has to catch the interest of the person reading it in order for them to process further. This is why there is solid reason to state that a recipient may be sensitive to the message sent via the subject line.

The usual email subject lines have formats that we can sometime expect depending on the content and sender. Sometimes the subject line works toward giving legitimacy to the message, or offer some sort of prize or reward, be an appeal for help for a good cause, ask an interesting or controversial question or even something personal to the recipient like using some of their personal info or past purchasing history (Porter & Whitcomb, 2005).

Even if email is a widely used channel for marketing, there is little academic research looking for the link between email subject line and response rates. A series of experiments looked at survey responses increase or decrease coming from emails with different subject lines. There

was no significant difference from emails with generic subject lines to emails with customized subject lines in matter of survey completion rates (Callegaro, et al., 2009). However, an analysis performed in messages posted in forum newsgroups found that the addition of a question mark increase the likelihood of a response (Burke, et al., 2007).

While some researchers have managed to reveal that the subject line is used a filtering mechanism when reading content, in a case study examining the role of a subject line there could not be made a link between subject line categories and the number of times the message was read (Skogs, 2013). Categories were referring to subject lines reflecting the content of the message, other describing the function of the message while lastly other ones including greetings or salutations.

Within the literature cited on this topic a specific study stands out as one of the most cited and it looked to assess the effect of the email subject line on survey viewing and survey response (Porter & Whitcomb, 2005). A large number of students were asked to participate in a survey related to their university life and were split in four categories of recipients based on the subject line they were going to get. One of the groups received emails with a subject line containing the word “survey”, another group received a line containing the name of the university, a third group received a blank subject line while the last one was sent a plea for help. The main observation of this study was that most students opened the email with a blank subject line and the least opened subject line was the one containing the word “survey”. Based on this there were a series of takeaway conclusions from this. One is that messages having a subject line that has an information gap, or no subject line at all will increase the likelihood for an open and a read of the message out of human curiosity. Another one was that messages making a plea for help were seen as spam messages.

The main idea coming out of the previously presented case study is that silence in communication can provoke a response. Having an information gap in the message will appeal to human nature to try to close that gap even if it's not following their immediate interest. Many marketers have tried more or less successful to benefit from this human behavior, although while previously presented studies were of academic nature and with small audiences, in real life the ability to utilize a blank subject line to try to precipitate a response has either been hindered by the widespread of spam and totally made an impossible practice by the most recent spam filter regulation of internet service providers. These providers would automatically flag a message without a subject line as junk or spam thus not allowing it to reach an inbox folder.

While the literature of response rates to emails in connection to surveys responses is large, the specific use of the subject line in this process is not addressed in great detail. Research connecting email subject lines to open rates and then to direct responses (whether they are a response to a survey, or a purchase, or a visit to a link in the email) is scarce with live business to business email marketing data, while most of these previous researches were done in either an academic setting or user forum scenarios.

The purpose of this study is to be a road opener and partially address the existing gaps in literature by correlating subject lines to email opens using live marketing emails with real life recipients.

Research methodology

This research is looking to analyze marketing data from marketing communications sent in the United Kingdom by a major telecom company in the European Union during the year of 2019. This marketing communication are primarily sent to the UK market.

The raw data is a database extract containing all email names and subject lines, the numbers of sent and delivered emails per piece, the number of opened emails, the open rate and the unique open rate.

All these communications were business to business communications. For matters or relevance, we will exclude from the data sample email communications being sent to less than 1000 recipients.

We will be calculating an average open rate for all 2019 sends by reporting ourselves to the total number of sent emails that year and the ratio of each individual email sent within that total.

We will be analyzing the resulting data in matters of size from the total numbers of communications sent, in matter of the best overall performing message and it matters of similarity between the different subject lines. As this research paper is a first glimpse at the topic, we will be looking to gauge the average number of words in these subject lines, the average number of characters and to categorize as simply as possible the type of message (question, plain statement, exclamation, prize/sales reduction offering).

Results and discussion

The database resulted for this research consists of 263 different email matching the criteria of being sent each to over 1000 recipients at least. The total number of emails sent using these 263 emails totals 4.1 M (million) emails being sent out of which only 3.54 M emails were received. The total number of email opens is 1.04 M, this bringing us to an open rate of 29.49%. The number of unique opens is 223 K (thousands) emails, meaning we have an unique open rate of 6.3% thus on average each of these opened emails was opened about four to five times by the same recipient.

In order to proceed with our research we have extracted the sample that contains above average email subject lines when reporting ourselves to the open rate. The number of remaining emails that had an open rate higher than 29.49% was 161 from 263.

Out of these 161 email we had to eliminate a few outliers: the first initial highest open rate was belonging to the token authentication email for order details. This emails had a 4265% open rate but accounted for only 2070 delivered emails. We also had to delete one more entry which was a dynamic content subject line for which we could not see the line itself as the reporting tool only provided the programming code for the content.

These 159 resulting emails with an open rate above the 29.49% average had a total number of 858 K emails received out of that 3.54 million total. This means that from the total sent communications, only 24.5% had an open rate above the total average.

The first four ranking emails have open rates of over 300%, the highest having 369.7% and the fourth having 321.83%. These four emails account for about 12 K email sends. Looking into more detail at this 4 remarkable communications we notice:

- Their subject line has between 3 and 6 words;
- Their subject line has between 23 and 36 characters (including spaces);
- All of them are plain statements, none of them being questions or exclamations;
- One of them is using the name of the company and service provided;
- The most successful one uses both the name of the company and a sales incentive of more gigabytes on your offer, doing so in 6 words and 35 characters;
- The second most successful is an out of contract notification.

When comparing these top performers with other studies we can notice that although in the case of the university case study where the university name was used in the subject line yielded poor results, in the case of a business to business communication it can be otherwise. As a matter of fact a number of 51 subject lines out of 159 have the company name part of them.

Analyzing some more into these subject lines we see that the average number of words is 7 with a minimum of 3 and a maximum of 14. The average number of characters within a subject line was 48 with a minimum of 21 and a maximum of 94 (all including spaces).

We will be summarizing the initial sample in the table no. 1.

Table no. 1 Overall research sample

Number of email assets	Number of sent emails	Number of received emails	Total Opens	Unique Opens	Open Rate	Unique Open rate
253	4.1 M	3.54 M	1.04 M	223K	29.49%	6.3%

Source: Personal interpretation

The resulting research sample was significantly smaller after filtered for an above average open rate and the main metrics on it are summarized in the table no. 2.

Table no. 2 Filtered research sample

Number of remaining email assets	Number of sent emails	Number of received emails	Total Opens	Unique Opens
159	962 K	858K	738K	242K

Source: Personal interpretation

An important think to notice is the high deliverability rate in the case of these high performing emails. We can see that 858 K email were received from 962 K being sent. This take the deliverability rate in the 90% area.

The main format taken away in matter of size is that short subject lines with up to 50 characters are the most successful (Table no. 3).

Table no. 3 Subject line size

Average subject line character count	Average subject line word count	Variation in subject line character count	Variation in subject line word count
7	48	From 21 to 94	From 3 to 14

Source: Personal interpretation

Conclusions

We believe this paper sets ground for solid subject line format and open rate dependency research. This initial large sample of over 858k over performing sent emails showed us that common traits of above average subject lines are having a subject line of about 7 words and up to 48 characters. They span from 3 to 14 words and from 21 to 94 characters.

The best performing subject lines from our research have between 3 and 6 words and up to 36 characters. This is all obviously in the context of this research, done on a telecom company. In comparison to previous forum and academic studies, using the name of the company has yielded positive results regarding the open rate of the emails. Almost a third of these high performing subject lines had the name of the company or the name of the service, in this case the name of the service also containing the company name. The company name was also present in two out of the four most successful.

By looking at these results we can see that many times results obtained from practice can be different from results obtained from theoretical studies with case studies taking place under controlled academic circumstances. The use of the company name is one example while another one is the use of a blank line. None of these subject lines involved in the study had a

blank subject line and the reason is practical: they would have never made it to an inbox in real life due to internet service provider filter.

There are many interesting topics to look into for further research on this topic. I find of particular interest the use of personalization in subject lines and its impact open rates. The research could also be extended to clicks within the email or with a research focusing on opened emails but not clicked in comparison to the subject lines of the clicked emails. Other similarly interesting topics would be to create a text processing algorithm that could be “fed” with performant subject lines which could then provide an assessment regarding the open rate of a user input subject line. The mapping of the strength of association between subject line keywords and the close examination of re-occurring keywords can be interesting areas to explore with the co-word analysis technique used many times for social media posts.

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PERSONAL BRANDING VS. NATIONAL IDENTITY

Mihai Ioan Roșca¹ and Angela Madan²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*
E-mail: mihai.rosca@mk.ase.ro; E-mail: angela.madan@mk.ase.ro

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Abstract

In this period of globalization it is important to understand and maintain national values. National reputation is an important factor in international marketing. Mainly, personal branding is regarding with the national values, of the country of origin. A nation brand is the sum of people's perceptions of a country across the most important areas of national competence. Nation branding is influenced by the country image, reputation and positioning. It represents interest in studying personal branding and business ethics as a part of nation identity, which was not enough studied. Also, it represents interest in analysing Romania branding in a globalization era. Since the beginning, work on subliminal effects was investigated in marketing applications of the question of effects on behaviour. I set out to do an office job, for evaluation of Romanian branding in a globalization era, and if personal branding, mainly business ethics may influence nation reputation, as well as importance of rhetoric in creating person's own image. Personal and country branding are sparking interest among general public and marketers.

Keywords *personal brand, national image, rhetoric, brand value, business ethics.*

JEL Classification

M30; M31; M39

Introduction

The theme of this paper can be placed between necessities of personal branding and country image in era of globalization. It is important to determine if the positive perception of country identity will lead to a positive perception of its population, and vice versa.

The objective of the present study is to analyze the differences and similarities in business ethics in different countries and which is the role of personal brand in national identity.

The paper aims to bring a contribution in identifying the difference of national image with his main assets, mainly population, in an international market.

In the current context of globalization, the competition between countries all over the world in attracting investors, visitors, inhabitants or export markets is fiercer than ever and growing, and because of this is important to maintain a positive national reputation.

Personal brand mainly consist of same specific habits from residence country, and it is based on verbal and nonverbal communication. In an international marketing it is important to understand that people from different countries have different perception nonverbal communication and have different national habits.

National identity in a globalization era

In a globalization era, borders have disappeared and under international market conditions it is vital for all countries to improve their competitive identity and to improve their reputation. On the global market all the attention, respect and trust had countries with national reputation, as well as abundant opportunities and trust from investors, donors, consumer, tourists and others. Countries with poor reputation are marginalized (Zugic and Konatar, 2018).

“From the marketing point of view the market multiculturalism is the argument that denies the use of nations for cultural segmentation. The sustaining of a new set of international market segmentation criteria has to consider the multiculturalism phenomenon both from the point of view of the local implications and from cross-national ones” (Rusu, 2009, p.450).

Perceptions of a country are created and determinate by many things, each of them can create a better or worse country image (Candace, 2012).

“National identity, nation branding and national reputation are separate, but very interrelated concepts. Nation branding is something a nation does; national identity and national reputation are something a nation has. Public diplomacy as well as corporate communications (marketing, advertising and public relations) can play a role in nation branding and contribute to national reputation as well as to national identity” (White and Kolesnicov, 2015, p.325)

It is important to understand that national identity, as a self-perception, exists inside a nation but national reputation is outside the country and represent the perception of a nation internationally. In other words, “while national reputation is something a country has, nation branding is something a country, actively, does” (White and Kolesnicov, 2015, p.326).

The most valuable asset of a country it is its national identity – the way how it communicates to the world about the most important areas of national competence. “National identity is a complex set of elements that includes the nation’s identity: its history, culture, legal and political system, geography, and its visual elements, such as flags and buildings that are its symbols” (Zugic and Konatar, 2017)

In today’ world the nation brand and national reputation is an important concept. It is well known that a country identity may become an ‘umbrella brand’ for the population from that country. National brand can be influenced by a number of factors, such as reputation, positioning and country’s image and it is a sum of people’s perception about the country. In globalization period it is crucial for country to create and maintain a powerful and positive national identity, as a competitive advantage on international marketing.

“Nation branding includes a wide variety of activities, ranging from “cosmetic” operations, such as the creation of national logos and slogans, to efforts to institutionalize branding within state structures by creating governmental and quasi-governmental bodies that oversee long-term nation branding efforts” (Anholt, 2008).

“Nation branding and national identity have a symbiotic relationship. It is difficult to create a credible and cohesive nation brand, in the absence of a sense of national identity; positive national identity is a precursor to a positive nation brand” (White and Kolesnicov, 2015, p.324).

“The country brand image is represented by the particular type of feedback received by the nation from the outside world, concerning the credibility of the nation’s identity claims (nation brand identity). Thus the country brand image is what others perceive from what a country’s components (people and organizations) want the world to understand is most central, enduring and distinctive about their country” (Moiescu, 2011, p.272).

Difference between countries business ethics on international market

Different cultures have assigned prominence to different virtues, which are practiced by people, with respect to business, engaged in practicing ethics and are conducive to successful business activities. Industrialized countries, over the past several centuries, had several virtues which have been highly valued. (Bird, 2015)

“Over the last two decades, the globalization of business has been phenomenal, and its impact has been extensively studied in various fields of international business research including business ethics.” (Paik, et al., 2017, p.840)

The contrast of ethics between the worldwide countries is major.

It is evident that there are huge similarities and differences between ethics and values in business worldwide. More similarities can be seen between the USA, Canada and the United Kingdom because they are part of the Anglo cluster, they share cultural heritage. (Feikis, and McHugh, 2014)

Mexico culture is normative in long term orientation, conforms to hierarchies, is a society that tends to be committed to society, is very indulgent, favors competition and is very rigid in decision making process.

Canada culture is not normative in long term orientation, it is more inclusive in terms of power distance, it is individualistic, it is not indulgent, favors caring for other and it is flexible in decision making process. Canadian government ethics model includes their people.

Japan business ethics revolve around a sense of loyalty, heavy investment in workers. Japan’s business is concerned for nationalism, the group and loyalty to the business. Japan is moderately hierarchal and business decisions are made very slowly. Japan is a highly masculine society and indicate a very competitive and workaholic business trait. Traditions of gift giving may seem like bribery to western cultures.

In the **United States**, fairness, individual equality, adhering to business laws is the norm. The U.S is very high rated in individualism business is conducted freely, workers are self reliant, and promotions based on merit. United States, hierarchy is established for convenience, workers have access to leaders. „The American FCPA explicitly prohibits the bribing of foreign officials.”(Paik et al., 2017, p.852) “The U.S. is less masculine and competes on how well the business performs”, indicates caring and focus on quality of life.

United States government ethics model focus on the government itself.

Mexico business ethics differ from other country. Corruption and bribes are considered acceptable behavior, a simply monetary self-interest. Mexico is a hierarchal society. Mexico family loyalty is reflected in business. Mexico show masculine approach in business and conflicts are resolved through confrontation. (Kim, et al., n.d.)

Concerning bribery is considered acceptable behavior, while corresponding regulation and enforcement are much less strict in **South Korea**. During its rapid economic development Korean managers accept relatively weak environment-related community norms. (Paik et al., 2017, p.852)

“Historically, Slavs tend to regulate their behavior by personal judgments of what is right and wrong. For example, business people in **Russia** tend to perceive written laws as something variable, depending on the time and situation and show skillfulness and ease in manipulating state legislation (Rees and Miazhevich, 2008, p.59).

Belarusian business culture is characterized by the pervasiveness of double ethics while dealing with the state, the importance of informal networks and low work motivation. Residual soviet ideology appears to be more persistent in Belarus than in Estonia. Also, there are socio-cultural differences between Estonia and Belarus. “The significance of these differences, which include nationality and religious legacies, will almost inevitably be overlooked should the countries be placed under the general umbrella of ‘former soviet states’ when considering business ethics in these contexts”. A distinct Belarusian relativism is

apparent in attitudes towards morals and law. The levels of idealism of Belarusian and Estonian managers are more difficult to predict than levels on the dimension of relativism.

For **Estonia** business ethics are relevant values including values of work, values associated with the traditional rural way of life and the importance of land, farming, diligence and individualism. "These include egalitarianism, mutual solidarity, assistance and respect." Among "Estonians the soviet era is universally seen as a time of oppression." (Rees and Miazhevich, 2008, p.59)

"More superficial differences in culture can be found in symbols and rituals. Values are at the core of economic behavior and could help explain differences in the conduct of firms." Values are affected by the environment, by the cultural context. "Different cultures have their own acceptable and unacceptable behaviors." (Scholtens and Dam, 2007, p.280)

Candace (2012) mentioned that countries "combine the population with the image of the country of origin".

It is important to understand difference in culture in international field. As a result of globalization it is necessary to study national differences, and in particular, non-verbal communication from different countries. Non-verbal communication is the use of non-verbal symbols as: "gestures, mimics, accent, intonation, interjection and others" (Popescu, 2001)

In international business the tiniest gesture can ruin important deal. For example, is very important to know the difference in the style of handshaking. For Americans, the British, Australians, New-Zeeland's, Germans it is usually to shake hands, when they meet and leaves. In Japan physical contact is considered impolite and even an insult.

Country branding – theoretical approach

Branding a country, in today's contemporary world, it is a long term strategic move. "The four main target markets of a country branding process are: visitors, residents and employees, business and industry and export markets". (Moisescu, 2011, p.272)

"Branding a country is not the same thing as promoting tourism" (Mocanu, 2014, p.89).

"Brand and branding are major marketing pillars. Product brands and corporate brands are part of the marketing management approach of many companies. The concept of brand has evolved progressively from simple "marks" of identification and competitive differentiation to love marks that build loyalty beyond reason" (Balan, C., 2013, p.41).

"Whereas reputation management, which includes nation branding, is something a country proactively *does*, a country's image is something it *has* and exists in the perceptions of audiences" Candace L., (2012)

"Nation branding is the process of building and managing a country's identity and image distinctly to attract and satisfy the needs of internal and external stakeholders, visitors and investors". (Zugic and Konatar, 2017) "A country brand may become an umbrella brand, ingredient brand or co-brand, intended to endorse certain economic sectors of a country" (Dinnie, 2007).

The American Marketing Association (AMA) defines brand as a "name, term, design, symbol or any other feature that identifies one seller's good or service as distinct from those of other sellers", that is, a combination of characteristics intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of the competition.

Romanian country branding

In their extensive study White and Kolesnicov (2015) elaborated new methods to positively influence people around the world and to build a better national brand of Romania. They start their research from the premise that all post-communist countries need to reinforce positive stereotypes and to change their negative ones. The cases which they propose suppose to create a national brand which is based on national pride and Romania identity. "The campaigns

initiated a dialog that helped persuade Romanians to be proud of their heritage and the local brands that carry their history and tradition, thus promoting a more cohesive and modern national identity, while also creating positive social capital around the brand itself". (White and Kolesnicov, 2015, p.334)

"Romanian society is now a mix of Westernized values and Romanian traditions, and is still in the process of developing a unified national identity and a cohesive national reputation". (White and Kolesnicov, 2015, p.328)

Plaias and Cotirlea (2013) expressed their opinion about branding Romania. In their qualitative research, they proposed that at the foundation of promoting the national image of Romania, revision of the past, is a must. In their opinion, the brand of Romania is the population and its values, traditions and the most favourable is to represent Romanian culture and civilization.

Personal branding phenomena

The personal branding, at the beginning, in the late nineties of the XX century was especially applied to celebrities, politicians and leaders. After that, it became implemented by managers, scientists, higher education teachers, and others.

Building a successful personal brand strategy requires a lot of personal effort, self-knowledge and time. Formulating an effective personal brand strategy is a complex process; it is based on individual values, personal, interests and beliefs and contributes to maintaining a positive reputation. (Kucharska and Confente, 2017)

For personal branding it is important to be unique, meaningful and profitable, because of this it is important to develop it constantly. (Pringle and Field, 2011).

"Personal branding is less about self promotion and more about building confidence to administer in one's field of expertise." (Amoako and Adjaison, n.d., p. 118)

There is a strong relationship between personal branding and personal performance. People need to improve their performance by way of the development of their thinking ability and skills, and when personal branding development programs are facilitated, they can improve their level of commitment, sharing of knowledge and honors to work. Personal branding is the responsibility, first of all, of the person. (Amoako and Adjaison, n.d.)

This paper, also, examines the necessity of studding rhetoric as an important part of personal branding or not. "Rhetoric is the art of persuasion, which along with grammar and logic, is one of the three ancient arts of discourse. Rhetoric aims to study the capacities of writers or speakers needed to inform persuade, or motivate particular audiences in specific situation" (Wikipedia)

Conducting a quantitative research study of people's opinion and perception of rhetoric, if it is an important part of business ethic, we produced results which showed that 87% (from a sample of 150 people) thought that rhetoric is needed. Rhetoric is needed to take in consideration in personal branding.

"Individuals who make the effort to build their personal brands are likely to achieve greater output in individual or personal performance, workforce productivity and great career success." (Amoako and Adjaison, n.d., p.127)

Conclusions

As the global economy grows, each country's perception of ethics will change to strengthen business relations between these countries.

Companies, which intend to activate on international marketing should be well aware of the differences in business ethics in different countries and industries. (Scholtens and Dam, 2007)

On the multinational market, are felt influences of different cultures with regard to legislation, organizational codes of conduct, as and, values, self-regulation and beliefs of personal factors. Due to different business cultures there are differences in ethical policies and in codes of ethics adopted in various countries. "The home-country context influences the development of different codes of ethics, as government regulations usually vary among countries" and "the culture of a country has a strong influence on business managers' ethical attitudes". (Andrade, et al., 2017, p. 3)

It is notice that a person can identified, most of all, with the country of origin. At the same time, each person can improve the image of the country of origin, by improving his personal image. This may become significant as an important tool to explore the potential of population as a stimulus for economy, for creating a better national identity. It is important to mention that both decision makers and the pollution of a country "want that high incomes and prosperity to become part of the national image" (Zugic and Konatar, 2017).

Personal and national branding and the correlation between them are not been, quite so widely, researched on a scientific level. This is a wide theoretical study that needs further study. In Romania, national and personal branding has been tangentially studied, and because of this it is essentially to do more complex research in this field. The work also provides a foundation for future studies.

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THE USE OF HASHTAGS TO PROMOTE SUSTAINABILITY

Bogdan Cristian Onete¹, Sandra Diana Chița², Doru Alexandru Pleșea³ and Vanesa Mădălina Vargas⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: bogdan.onete@com.ase.ro; E-mail: sandra.chita@yahoo.com

E-mail: pleseadoru@gmail.com; E-mail: vargas.vanesa13@yahoo.com

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Abstract

Nowadays, social media are used on different purposes, they are not only one of the best marketing tools, but they are also helpful in the process of creation of certain communities fighting for positive changes in the world and they are used to trigger awareness. This paper brings out an analysis on the representation of the sustainability concept on the social media. Our research is based on the usage of Instagram hashtags linked to sustainability on Instagram, based on prior research on the use of hashtags (Ichau, Frissen and d’Haenens, 2019). Our data consists in a set of 100 Instagram posts collected manually from Instagram platform and consists on random publications searching by the hashtag “#sustainability” in order to understand how hashtags contribute to the creation of web representation for this specific concept. An in-depth content analysis has been done in order to understand what type of accounts are using the hashtag #sustainability, and what is the purpose of these publications taking into consideration the type of information provided and also the other hashtags linked with “sustainable/sustainability” in order to have a better idea on the field that it applies to for each post. Our findings show 5 different categories of accounts promoting the concept of sustainability via hashtags: companies, influencers, NGOs, normal accounts and fan pages. Each of these has a different purpose for posting and some correlations can be seen between the type of accounts and the purpose of the post.

Keywords

Instagram, Hashtags, Sustainability, Sustainable practices, Social influence

JEL Classification

M14, L82, L86, Q01

Introduction

Social media has become part of our daily life, making it difficult for an individual to stay away from them and still be fully connected to the world and to his social groups. People get in touch with each other thanks to different platforms where they can exchange and there are

various methods used by people having a certain hobby or interest in order to meet other people from the same area. There are online groups linked to sports, nationalities, universities, jobs and many other things. People usually reunite in order to feel inclusion and to seek for advice or help. For example, a group for foreigners is very useful when moving to a new city helping the newcomers find accommodation, understand the market, be fully aware of the new reality they are living without putting themselves in danger or being victims of scams. In other cases, people living a certain style of life find it easier to share news with individuals living in the same way and they find it really motivating to share little achievements with those feeling the same struggles. Companies who want to promote themselves and their conscious and responsible way of doing business are trying to get to their customers in the same way individuals do. But how can they be more efficient?

There has been an incredible increase in the popularity of hashtags used on different social media platforms. Hashtags are more usually known to exist on Twitter and Instagram. Most of the best innovation implemented by Twitter in its functionalities were ideas of users, this is what happened for the hashtags as well since users wanted to have the possibility to easily access public content following a certain categorization (Figueiredo and Jorge, 2019). While posting on Instagram users have the possibility to use hashtags on their caption, they can simply do it by typing “#” followed by text or even an emoji. After doing so, by clicking on the hashtag it brings you on a page that includes all photos and videos containing that specific hashtag. There are a few limits to the hashtag option: for people having private accounts their hashtags won’t be shown publicly on the hashtag page we mentioned, also only letters and numbers are allowed while using hashtags. Every account user can tag his own posts and can use up to 30 tags per post (Instagram, 2020), “these are organically transformed into hyperlinks redirecting to all other content on the platform labelled with given hashtag” (Ichau, Frissen and d’Haenens, 2019). Based on a similar research on the use of hashtags conducted by the previously mentioned authors, our study aims to provide a better view on the web representation of the sustainability.

Research background

Since 1972, world leaders reunite every ten years under the authority of UN in order to define and promote sustainable development in the world. Each of these conferences marked a milestone in the international awareness of the challenges of sustainable development. Circular economy is an important aspect to be taken into consideration and it can present new opportunities for everyone involved but the consumers are not always interested to be part of the process. For example, a quantitative research has been conducted in Romania among youth to see if they would take into consideration to reuse the software of their electronic. The results showed that young Romanians use the latest versions of software but in the same time they are conservative with the systems they use and even if they adapt really fast to change they prefer to have stability.

Also, study has been conducted in order to see how “Green” and “Not Green” companies use the social media and what type of communication they have via these platforms, whether in terms of sustainability or not (Reilly and Hynan, 2014). The 16 companies that were studied focused on 4 different industries and data was collected using different resources. Companies were chosen based on their Newsweek score: «since 2009, the Newsweek Green Rankings have been one of the world’s foremost corporate environmental rankings” (Newswire, 2016). Results have shown that Green companies are more open to the communication of sustainability info than Non Green ones and they were also more present on social media as Facebook and Twitter. In the same time, it is difficult for companies, especially small ones to add on top of the need to constantly improve their competitiveness the burden of sustainability, this is why researchers have been studying “Sustainable Strategic Management” in order to

help companies implement the concept of sustainability in a good way leading to the creation of a competitive advantage (Barbosa, Castañeda-Ayarza and Lombardo Ferreira, 2020).

Certain aspects as the education level of the employees, the freedom accorded to businesses and adopting renewable resources has a big impact on building an ecological footprint. Digital aspects are combined with production surroundings introducing smart devices (Beier et al., 2020). Taking into consideration the big impact and evolution that Industry 4.0 known as the fourth industrial revolution has, people are identifying new opportunities of including sustainability functions (Ghobakhloo, 2020). Social media has a big impact on economy segments such as tourism where normal presentations used before have been transformed in snaps on platforms as Instagram or Facebook, where different users work together for the benefit of the field.

In general, social media represents an opportunity for the goods market to reach to consumers, especially when we talk about fashion, businesses are trying to build powerful channels using hashtags (Euromonitor, 2015). In this case, social media become a place for sociopolitical matters, having the great characteristic of making the information easily get to the public but creating in the same time controversial discussions. Some of these topics have become the source of researches who study aspects of the population such as homophily, easily expressed via hashtags (Xu and Zhou, 2020).

A study based on Uses and Gratifications method has shown 6 reasons behind the use of hashtags: “Self-presentation, Chronicling, Inventiveness, Information Seeking, Venting, and Etiquette” (Erz, Marder and Osadchaya, 2018). Also, studies have been conducted in order to predict the time and the volume of the hashtags’ peak using Twitter data in order to use results in the implementation of beneficial changes in the usage of some applications (Xu et al., 2018). In the same time, it is pretty difficult to merge hashtags by clusters because user are in total control of the way they are using them, adopting a big variety of hashtags and making it difficult to analyze the common points of them and their context. In this sense, a clustering algorithm was developed in a hybrid way by researchers (Javed and Lee, 2018) analyzing hashtags on a lexical and contextual level.

Research Methodology

This article analyses the creation on a web representation of sustainability on social media platforms. The purpose of this research is to verify the extent of the concept and the fields in which it appears as well as the purpose of its utilization and the correlations that may be established between the purpose and the type of the user. This paper answers the questions if the use of hashtags linked to sustainability is due to the financial purposes or as a tool to raise awareness concerning the importance of sustainable development, a better use of resources and protection of the planet. We collected a random dataset of 100 Instagram post containing the hashtag #sustainability. We have to mention that a total of 5.5M posts on Instagram include this hashtag. Data was collected manually in different Excel files, and it supposed close reading in order to identify connected information and to merge them into different categories. Posts have been published from different countries around the world, most of users being located in Europe and United States. We identified categories for the type of the account, the purpose of the post, the description of the account and the other hashtags linked with sustainability. The next step was to review the categories that were created. A code was determined for every category and applied to all items (n=100) in order to import data in SPSS (Statistical Package for the Social Sciences), for example we used dichotomous variables (0 = yes, 1 = no) for the presence or absence of other hashtags linked to sustainability.

Research results and Discussions

1. Categories of accounts

Based on an analysis of the content we created 5 categories of account (Fig. no. 1): company (businesses as well as brands), influencers (people making advertisement for their own content as blogs and for other brands), NGOs (raising money to help certain causes and promote awareness), normal accounts (personal account from people who decided to lead a sustainable life) and fan pages of personalities. We found 41 companies, 38 influencers, 11 normal accounts, 8 NGOs and 2 fan pages.

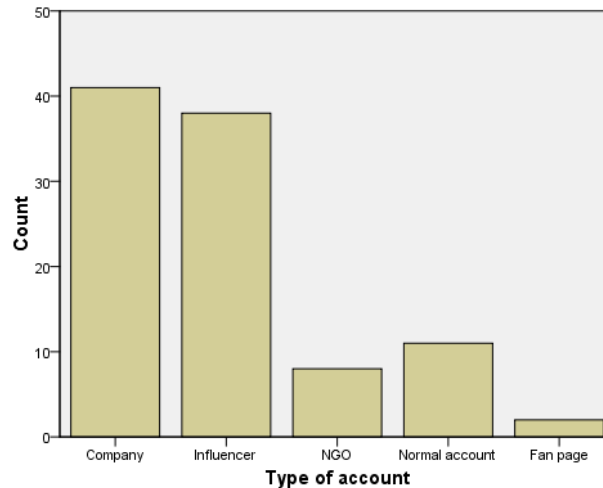


Fig. no. 1 Type of accounts

Source: Authors' own research

The number of followers of these accounts goes from 34 to 667 000 with a mean of approximately 14298, meaning that these hashtags can reach an average of approximately 14K views (Table no.1). The creativeness of the content on Instagram is proven to be the leading element to create engagement from the followers' perspective (Casaló, Flavián and Ibáñez-Sánchez, 2018), especially for the fashion market which is in the same time based on our research really involved in promoting sustainability.

Table no. 1 Statistics about the number of followers

Statistics		
Number of followers		
N	Valid	100
	Missing	0
Mean		14293.88
Minimum		34
Maximum		667000

Source: Authors' own research using IBM SPSS Statistics

2. Purpose of the post

We found 5 categories for the purpose of the post as follows (Fig. no. 2): self-promoting, promotion, life style, hidden promoting and information. Most of the posts were created in order to self-promote (influencers promoting their own accounts in order to get followers and increase their position in the rank in order to obtain collaborations, brands promoting their products and services). Consumers make their purchases based on the advice they receive from influencers who are building brand trust (Jin and Ryu, 2020). These posts contained other hashtags such as: #ethicalfashionblogger, #ecofashionblogger, #vintagefashion, #ethicalfashion, #veganpizza or #highquality. There were also posts to promote another brand/ business ("promotion") having a business collaboration behind. "Hidden promoting" refers to posts created as an information and containing certain tags in order to promote a good or service in a less aggressive way but still visible to the consumers. The posts used only as information were supposed to raise awareness about the dangers for the planet and the possibilities to make a positive impact and they were associated with other hashtags such as: #wastefree, #reducewhatyouproduce, #livesimply. Personal accounts were usually promoting a sustainable life style, frequently describing themselves as "activists" and promoting different things thanks to the hashtags (linked to sustainability): #plantbased, #ethicalconsumer, #veganlifestyle.

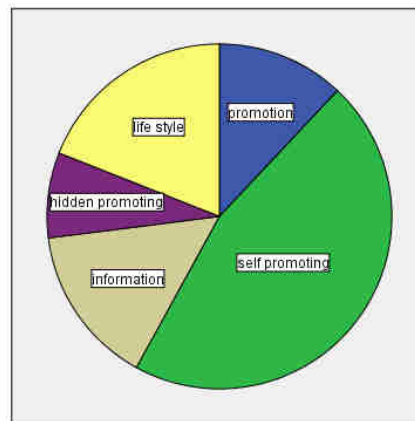


Fig. no. 2 Purpose of the posts

Source: Authors' own research

3. Hashtags linked with sustainability (how many times used)

Aside from sustainability, the maximum number of hashtags adopted by users in the same post with the root "sustainable" or "sustainability" was 5 and out of 100 users only 58 exercised this possibility of using similar hashtags multiple times. We have established the following codes for linked hashtags that we met more than once : "#sustainable fashion"= "0", "#sustainableliving" = "1", "#sustainablelifestyle" = "2", "#sustainablestyle" = "3", "#sustainable" = "4", "#sustainablefood" = "5", "#sustainablehome"="6" and "#sustainabilitymatters" = "7". We found the following records presented in the Table no. 2, meaning for example that the hashtag "#sustainablefashion" was used 23 times. The three most used hashtags were "sustainableliving", "sustainablefashion" and just "sustainable". All the hashtags are used in order to raise awareness among the population but the second one has also a marketing strategy behind, for companies and influencers promoting certain brands. Their purpose is to show that they are doing business in a responsible way keeping the respect

for the environment and the health of their consumers, raising their popularity among the sustainability activists.

Table no. 2 Number of registered uses of a specific code

Code	Total number registered
0	23
1	28
2	9
3	3
4	12
5	2
6	2
7	2

Source: Authors' own research

4. Correlations between data

We used the Pearson correlation coefficient (Table no. 3) in order to see if there is any association between the variables of our dataset. The Pearson correlation coefficient (r) can go from +1 to -1, a value greater than 0 indicating a positive association while one below 0 indicates the contrary, meaning that if the value of one variable has an increase the other variable presents a decrease in its value (Laerd Statistics).

We can see that for the two variables “type of account” and “purpose of the post” we have a correlation significant at the 0.01 level (2-tailed) and the coefficient r is positive and medium (medium goes from .3 to .5) meaning that there is a correlation between the type of account and the purpose of the post. This can be translated as follows: company and influencer accounts have a bigger change of hiding a financial benefit behind the use of the “sustainability” hashtag while personal accounts, NGOs and fan pages are using the hashtag to promote a healthier, simpler, waste free type of life from an ethical perspective which doesn't take into consideration their own financial advantage but the advantage of a sustainable development on a local and global level.

Table no. 3 Correlations

		Type of account	Purpose of the post
Type of account	Pearson Correlation	1	.324**
	Sig. (2-tailed)		.001
	N	100	100
Purpose of the post	Pearson Correlation	.324**	1
	Sig. (2-tailed)	.001	
	N	100	100

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Authors' own research using IBM SPSS Statistics

5. Performance of hashtags (programs to track)

Tools have been created in order to measure Instagram Hashtag Performance (Table no.4) for users to make sure they get to their target audience and make it easier for them to achieve their established goals.

Table no. 4 Tools to track hashtags

Name of the app
Command (Instagram analytics and tracking tool), an iOS app
Sprout Social (social media management tool)
Simply Measured (comprehensive social tool: analytics, reporting, listening)
Iconosquare (Instagram management system: det in-depth analytics etc.)
Keyhole (social media analytics tool: track hashtag usage statistics etc.)

Source: Social Media Examiner, 2017

Conclusions

The literature has shown that hashtags have a powerful impact on the new era of the digitization revolution, making concepts as “sustainability” way more visible and efficient to get to the audience. In the same time, it is difficult to control what is shared via hashtags and some hashtags are losing from their value because of the small number of usages, as well as a challenge in the way it is contextualized. Many researchers are trying to develop algorithms in order to help applications keep track on hashtags. Business accounts are usually paying for different platforms in order to get their data analyzed and learn when and how to post to get to their target.

The current article analyses the Instagram users that use the hashtag “#sustainability” and in what extent the purpose behind their actions is linked to a financial benefit using this tool as part of the marketing mix in order to promote an ethical and ecofriendly way of doing business respecting the planet as well as people’s principles and health. After gathering data from 100 accounts having used the hashtag sustainability, we have seen that all of them are promoting ethical responsibility, circular economy based on reduced consumption, reuse of resources and recycling. Personal accounts are contributing more to raising awareness among the population encouraging to a plant-based diet, a green consumption as well as a simpler and healthier life while business accounts are promoting themselves and brands in order to attract customers and show involvement in a sustainable development. On the other hand, NGOs are fighting against pollution and all the negative impact of the lack of ecological lifestyle, raising money and educating the population concerning the consequences of a harmful existence to the planet. This study also present limitations, based on the small number of analyses accounts this limits the generalizability of the findings. Another limit may be the fact that the main search of the word “sustainability” has been done using English language and tracking the geographical position of the users was usually difficult as well. Further research analyzing the peak of the sustainability hashtag highlighting its importance is needed.

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INTERCONNECTION OF INFORMATION AND COMMUNICATION TECHNOLOGIES AS A RIS3 KEY PRIORITY AND INNOVATION

Ivana Bestvina Bukvić¹, Ivo Mijoč² and Maja Haršanji³

^{1,3}) *Josip Juraj Strossmayer University of Osijek, Academy of Arts and Culture in Osijek*

²) *Josip Juraj Strossmayer University of Osijek, Faculty of Economics in Osijek*

E-mail: ibbukvic@aukos.hr; E-mail: imijoc@efos.hr;

E-mail: majam@aukos.hr

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Abstract

Smart Specialisation Strategy (S3) concept is incorporated in EU policies almost a decade ago with the aim of more effective and stronger support to national and regional strategic priorities and fields in which countries and regions can develop a potential competitive advantage. Information and communication technologies (ICT), although a priority area themselves, interconnect and complement all other priority areas which makes them even more important. In analyzing S3 concept implementation researchers found numerous issues that limit its application in desired scope. This paper aims to analyze the S3 implementation and inclusion of ICT as one of the key priorities of National Research and Innovation Strategies for Smart Specialisation (RIS3). This paper is giving the answers on following research questions: “Are digital technologies in the focus of less developed or lower level innovation countries, as of their existing potential to become future economic growth drivers?” and “What is the impact of *Europe 2020 Strategy*, measured in GDP per capita percentage change, in the period before and after the *Europe 2020 Strategy* presentation?”.

It was found that the lower-level innovation countries are more often choosing the ICT as RIS3 priority. These and other findings stated in this paper can be of use for policy-makers on the EU and national level in a future revising of the RIS3.

Keywords

Information & communication technologies, GDP per capita growth, Research and Innovation Strategies for Smart Specialisation

JEL Classification:

O52, O20

Introduction

As of European Union (EU) endeavours to reduce gaps in the development of its Member States and to achieve balanced economic growth, numerous policies have been adopted and activities carried out. „Since 2000, the financial instruments of the European programs have been more focused on making innovation policies more effective and in line with business needs, in particular by encouraging greater cooperation between business and other economic actors.” (Pacheco et al., 2020, p.14) “Investment plan for Europe” was adopted in 2014 with the aim “to boost investment, to increase competitiveness and to support long-term economic growth in the EU” (European Council, 2020, p.1). The Smart Specialisation concept on the level of EU was developed in the frame of *Europe 2020: a European strategy for smart, sustainable and inclusive growth* proposed by the European Commission in 2010. The regions and Member States have been developing their own national and regional *Research and Innovation Strategies for Smart Specialisation* (RIS3) for the financial period 2014-2020, intending to identify the key priorities which can be supported from the EU funds, primary European Regional Development Fund (ERDF) (Jurlin et al., 2018) The special value of the Smart specialisation concept was that it was „expected to create more diversity among regions than a regime in which each region tries to create more or less the same by imitation.” (Foray et al., n.d.) Smart Specialisation in this context means „countries should identify strategic “domains” of existing and/or potential competitive advantage, where they can specialize and create capabilities in a different way compared to other countries and regions” (Asheim, 2018, pp. 2-3) „Smart Specialisation policy targets industrial restructuring and economic growth, therefore understanding the economic effects of S3 is crucial for policy design and evaluation.” (Varga et. al, 2020, p. 17) The concept of sustainable and smart growth was spread over the EU borders. In 2015 UN Member States, adopted 17 Sustainable Development Goals (SDGs) as part of the 2030 Agenda for Sustainable Development. Out of 17 goals, 3 are directly connected to the macroeconomic aspect of growth; *Reduce inequality within and among countries* (10), *Industry innovation and infrastructure* (9) and *Promote sustained, inclusive and sustainable economic growth full of productive employment and decent work for all* (8). By analyzing the achievements of all member countries it was found that EU countries are among the top 20 worldwide in achieving the SDGs. At, the other hand the European Commission (EC) gave an overview of progress towards the SDGs in an EU context where it was emphasized that the macroeconomic directed goals 9 and 10 are the lowest-ranked, while the 8 is placed in the middle of the moderate progress rank (European Union, 2019). Following the previous S3 concept „in the new programming period 2021-2027, according to the European Commission proposal (2018), the governance of the national or regional strategy for smart Specialisation is the only enabling condition (a precondition for effective and efficient implementation) for Cohesion Policy Objective 1: “A smarter Europe, promoting smart and innovative economic transformation”. (Pacheco et al., 2020, p. 10) Landesmann and Stöllinger (2020) are seeing S3 supported by the major EU fund (ERDF) as a way of improving the effectiveness of the EU’s cohesion. In this process digital transformation, key technologies and ICT are seen as development drivers (Bestvina and Đurđević Babić, 2019). In Slovakia, as a result of technology-oriented national Smart Specialisation strategies almost EUR 400 million was invested in science parks and capacity building incubators specializing in ICT or biotechnology (Balog, 2020:114) to raise the level of digital and technical innovation capacities. Nevertheless, the significant differences in absorption power and the capacity to implement the RIS3 between Member States are arising. The aim of this paper is to contribute to the ongoing discussion and better understanding of an S3 concept and analysis of the level of inclusion of ICT as one of the RIS3 key priorities which will be determining Europe’s future global competitiveness and a concept that can contribute to fostering of economic growth of less developed or countries positioned on a lower level of Innovation Scoreboard. The authors are expecting to get the answers on the

following research questions: “Are new technologies in the focus of less developed or less innovative countries as possible future economic growth drivers?” and “What is the impact of *Europe 2020 Strategy*, measured in GDP per capita percentage change, in the period before and after the Strategy presentation?”.

The paper is giving the analyses of data published by Eurostat and EU of the presence of the ICT in the national RIS3 by the level of country innovation performance and analysis of annual GDP per capita percentage change trends (observing the periods before and after the presentation of the *Europe 2020 Strategy*, i.e. 2000-2009 and 2010-2018) for 28 European countries (EU Member States and United Kingdom (UK)).

Smart Specialisation implementation challenges

Although S3 is a progressive concept set on the level of EU policies and strategic documents its implementation faced numerous obstacles. Many factors are influencing the S3 success and furthermore, even its applicability to less-developed countries and regions has been questioned (Hassink and Gong, 2019; Trippl et al., 2020; Murzyn, 2019; Kiel, 2019). It was found that there are open question starting from the efforts of local policy to develop models for its implementation and development of institutional support, the absorptive capacity of regions and companies, R&D organization inclusion into development processes, funding capacities, etc. It seems that after the S3 devising, the development of a supporting environment for its implementation should become a priority. (Trippl et al., 2020) But the differences in absorption are not only coming from the challenges on the national level but on the regional and local levels (Keil, 2019, Hassink and Gong, 2019; Trippl et al., 2020, Murzyn, 2019). Pavone et al. (2019) are searching for regional differences to find complementarities and synergies among the EU regions that could be of use in designing and implementation of innovative programs within the regions, where regions should conduct more focused than generic analyses and learn from other more successful regions (Balland et al., 2018; Varga et al., 2020). The models of improving connectivity between regional stakeholders should be developed, as low connectivity is slowing down the S3 implementation (Mäenpää, 2020). But, at the same time „even when regional capabilities and inter-regional linkages are in place, a weak institutional structure might still prevent a successful diversification process in regions.” (Balland, Boschma, 2019) Papamichail, Rosiello and Wield (2019) have argued that there are three Capacity-building barriers are preventing S3 practices fulfilling its goals which include the lack of collaboration especially between the companies and universities and absence of trusted-based relationships based on Quadruple Helix model that lead towards a different understanding of strategic networking and lack of quality science-business projects (Papamichail et al., 2019) Keil (2019) analyzed how the S3 affected policy-making and how it was adopted in an existing institutional environment in Poland and Lithuania, both moderate innovators. She found that both countries struggled with adopting the innovation concept, especially in the business sector, trying to find a solution with low absorption capacities and possible low cooperation level between business, government and universities with a consequence of a relatively low application success rate in some priority field where business should be involved (Keil, 2019). This is in line with the findings of other authors (Trippl et al., 2020; Papamichail et al., 2019; Asheim, 2018). For those reasons the researchers are questioning the ways of the S3 model implementation and setting models of measurement of the Smart Specialisation effects (Hassink and Gong, 2019; Varga et al. (2020). Hassink and Gong (2019) state that the measurements are important to assess the potential of the regional economy to set and carry out the strategy and to evaluate the results of carried measures according to the strategic plan. This could be of valuable help to policy-makers to set up new or conduct a revision of existing S3 priorities (Varga et al. 2019). Future Smart Specialisation development measures need to impact on „research and

innovation, education (training and skills development), and digital society (using IT and communication technologies)” (Murzyn, 201, p.4)

Research methodology

The study was conducted through the following steps:

- 1) Review of EU policies, EU strategies and studies on S3 concept implementation which were given by previous chapters for the purpose of research question development;
- 2) Design of the research questions and identification of data sources;
- 3) Data processing, analysis and conclusions:
 - a) Determination of the relation between the level of innovation and ICT as a key priority in RIS3 on the level of the Member States and the UK;
 - b) Statistical analysis: comparison of differences in a GDP per capita percentage change, before and after the *Europe 2020* proposal based on country innovation level and comparison of differences in a GDP per capita percentage change of countries that defined ICT as RIS3 key priority.

Through the literature review, the following research questions were set: “Are the new technologies in the focus of less developed or less innovative countries as possible future growth drivers?” and, “What is the impact of *Europe 2020 Strategy*, measured by GDP per capita percentage change in the period before and after the *Europe 2020 Strategy* presentation?”

This study presents the analysis of data published by Eurostat and EU institutions where quantitative analysis applies on two periods: 2000 to 2009 and 2010 to 2008 (before and after the presentation of the *Europe 2020 Strategy* respectively). As of the small sample (28 countries composed of EU Member States and the UK as a former member that was still having a membership status in 2018) the for the purpose of analysis and confirmation of research claims authors used descriptive statistics and non-parametric (Mann-Whitney test). For the same reason the EU Member States were divided by innovation level on two groups: the Lower level innovators (modest and moderate innovators) and the Upper-level innovators (strong innovators and innovation leaders) by 2019 Innovation Scoreboard (Hollanders et al. 2019). Following this paper presents research limitations as follows: small sample size (all EU countries) and mixed distributions (tested by Shapiro-Wilk test) which were the reasons why a non-parametric test was used in statistical analysis. Additionally, the analysis was conducted on the national level where there could be differences depending on the level of regional development and absorption power. This paper is not indicating the reasons for success or a less satisfying S3 implementation results, but it is only presenting the conclusion regarding the existence of differences for the two observed groups during different periods. As well, this research was not analyzing macroeconomic circumstances that could affect the GDP. Global changes are more or less having an impact on all open economies but there are macroeconomic changes on the national level that are as well, out of reach of this survey.

Results and discussion

Through the first step of this research the identification of the connection of innovation level and ICT as a key priority in RIS3 on the level of the Member States and the UK was carried out. Table 1 provides a comparative analysis of the presence of ICT in the national S3 of the Member States and the United Kingdom, by the level of country innovation performance. It can be seen that the presence of the ICT as a Smart Specialisation priority area is more frequent in the modest and moderate level innovator group (69%) than in the upper level innovator countries (42%) where they could be hoping that new digital technologies and development of the society of knowledge will foster their economic growth and mitigate the difference in development to highly developed countries.

Table no. 1 Comparative analysis of the presence of the ICT as a RIS3 priority of EU Member States and the UK by the level of country innovation performance

Upper-level innovators		Lower-level innovators	
Innovation Leader	Strong Innovator	Moderate Innovator	Modest Innovator
FINLAND*	IRELAND*	ESTONIA*	BULGARIA *
SWEEDEN*	AUSTRIA*	HUNGARY*	ROMANIA *
GERMANY*	FRANCE	POLAND*	
UK (former EU member)	LUXEMBOURG	ITALIA*	
NETHERLANDS	SLOVENIA	LATVIA*	
DENMARK		SPAIN*	
BELGIUM		CZECH REPUBLIC*	
		SLOVAKIA*	
		MALTA*	
		CROATIA	
		PORTUGAL	
		LITHUANIA	
		GREECE	
		CYPRUS	
% of countries with ICT as a RIS3 key priority in the innovation group			
43%	40%	60%	100%

*Note: EU Member countries with ICT as a RIS3 key priority.

Source: author's work according to the Data published by the European Commission (2017), Publications Smart Specialisation - Strengthening Innovation (for all member countries and UK) and European Innovation Scoreboard report (Hollanders et al. 2019).

The quantitative research was based on analysis of differences of annual GDP per capita percentage change of the Member States and the UK, before and after the *Europe 2020* proposal through the following:

a) Comparison of a difference between the average annual GDP per capita percentage change in two periods (2000-2009 / 2010-2018). The countries were divided into two categories based on their innovation performance; therefore, the grouping variable was Innovation level where countries were divided on Upper and Lower level innovation countries (by Innovation Scoreboard 2019).

b) Comparison of a difference between the average annual GDP per capita percentage change in two periods (2000-2009 / 2010-2018) by the existence of ICT as RIS3 key priority (grouping variable).

A non-parametric Mann–Whitney test was used to analyze statistical differences on the sample of 28 countries, EU Member States and the UK. The results are following:

a) Grouping Variable: Innovation level (Upper and Lower level innovators) :

Difference of average annual GDP per capita percentage change of two observed periods for Upper level innovators (Mdn = -1.561) significantly differ the same indicator for Lower level innovators (Mdn = -1.112). (Mann-Whitney U = 45.00, z = -2.368, p < .05 (Exact Sig. (2-tailed)), r(Hedges' g) = 0.885. The effect size is large by benchmarks set by Jacob Cohen (1988).

By analysis of an annual GDP per capita percentage change between two observed periods, it was found that after the *Europe 2020 Strategy* proposal as of macroeconomic environment all countries faced decrease (from average annual growth of 2.55% to 1.94% comparing two observed periods) where the Lower level innovators faced a larger decrease of an average annual GDP per capita percentage growth (from 3.41% to 2.24%) than Upper-level innovators (1.54% to 1.40%), although all countries in average continued to achieve a positive annual GDP per capita percentage growth in a period following 2010 this increase was more modest.

b) Grouping Variable: ICT as RIS3 priority : By analysis of the differences between observed countries by criteria of the ICT as a key priority in RIS3 it was found that average annual GDP per capita percentage growth in both observed periods significantly differ between the countries that have not chosen ICT as a key priority in RIS3 ($Mdn0_{2010-2018} = 1.4450$; $Mdn0 = 0.9556$) in comparison to those that have chosen it ($Mdn1_{2000-2009} = 2.2500$; $Mdn1_{2010-2018} = 2.9111$). Following the results for both periods are given:

Results for the average change of average annual GDP per capita percentage growth in the period 2000-2009 (Grouping variable: ICT as RIS3 priority): (Mann-Whitney $U = 66.00$, $z = -1.393$, $p < .05$ (Exact Sig. (2-tailed))), $r(\text{Hedges' } g) = 0.517619$. The effect size is medium (Cohen, 1988).

Results for the average change of GDP per capita in the period 2010-2018 (Grouping Variable: ICT as RIS3 priority): (Mann-Whitney $U = 51.50$, $z = -2.066$, $p < .05$ (Exact Sig. (2-tailed))), $r(\text{Hedges' } g) = 1.00238$. The effect size is large (Cohen, 1988).

Through this analysis, it was found that both innovation groups that have chosen ICT as their RIS3 key priority have had larger growth of the observed indicator than the countries from the same group that has chosen other priorities (a group of countries with ICT as RIS3 key priority: Upper = 2.15%; Lower = 2.77; countries without ICT as RIS3 key priority Upper = 1.10%; Lower = 1.06).

Conclusions

The aim of this paper was to contribute to the ongoing discussion and better understanding of an S3 concept and to give the results of the analysis of the level of inclusion of ICT as one of the RIS3 key priorities as digital technologies are the ones that are considered as drivers of Europe's future global competitiveness and a concept that can contribute to fostering of economic growth of less developed countries. The question of a lack of institutional capacities and differences in the economic development and innovation level between countries and regions is being raised as an obstacle to a more efficient S3 implementation. The positive impact of implementation *Europe 2020 Strategy* was not found as both groups have faced the decline of the annual GDP per capita percentage growth as of macroeconomic circumstances whose analysis is out of the scope of this research. Nevertheless, it was found that most countries from the Lower level innovators (modest and medium innovators by Innovation Scoreboard 2019) have ICT as a key priority of their RIS3 strategies where this priority is more frequent in the Lower level innovators group than in the Upper-level innovators group of countries. In a group of Lower-level innovators, on average the countries with ICT as a key priority in RIS3 had a larger annual GDP per capita percentage growth than the comparable ones that didn't define ICT as a key priority. As of the limitations of the research stated in the previous chapter these conclusions are indicative but can be of use for policy-makers on regional, national and EU level as they point to the fact that the countries that are focused on digital technologies are achieving higher and stable growth.

Future research should analyze the implementation of RIS3 priorities on a regional level for the purpose of identifying the existing problems and actual benefits. As well, it would be important to assess the expediency of strengthening the ICT sector and assess its impact on the rest of the economy including the spatial spillovers. (Billon, 2016)

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TWO YEARS ANALYSIS OF ROMANIAN COUNTIES FROM AGRICULTURAL ACTIVITIES AND GDP PER CAPITA POINT OF VIEW

Ionela-Cătălina Zamfir¹

¹⁾ The Bucharest University of Economic Studies, Romania

E-mail: ionela.zamfir@csie.ase.ro

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Abstract

Data analysis methods are used mostly to identify hidden patterns between data in a multidimensional approach, so that the main purpose and hypothesis to be tested in this research is the existence of a relationship between GDP per capita and agriculture activities. Methods like principal components analysis to lower how many variables are used, as well as clustering techniques for grouping Romanian counties were applied. The purpose is to identify if counties with high agriculture activities (in terms of production and cultivated areas) also have a similar level for GDP per capita. Confirming this hypothesis, the connection between GDP per capita and agriculture is obvious. Romanian counties were analyzed considering two recent years (2017 and 2018) and 43 indicators that reflect the agriculture activity and the results are that, in both years, there is a relationship between the level of GDP per capita and the level of agriculture activities (in average).

Keywords

Principal components analysis, fuzzy clustering, agriculture variables, Romanian Counties

JEL Classification

C38

Introduction

There are many interactions, correlations and dependencies among the macroeconomic variables and sometimes a slightly change of one variable can lead to major changes of other variables (if macroeconomics is seen as a cybernetic system). The main objective of this research is to analyze the Romanian counties from agricultural activities point of view (cultivated area and production), in relation with GDP per capita. A two years analysis provides an idea about the changes that occur in different areas and what is the impact (if there is any impact) in GDP per capita.

The main hypotheses that the research rely on are (the hypothesis that the selected variables are reliable is considered true by default): there is a relation between the production and

cultivated areas of cereals, vegetables, fruits and GDP per capita; this relation is better described by a clustering model applied on Romanian counties and is "visible" in time (for a period of at least two years). Taking into consideration that, in Romania, the agriculture, forestry, and fishing, value added is over 4% of GDP (World Bank, n.d.) in the last 2 years with available data (period 2017-2018), there is a high probability to confirm the hypotheses from above.

The research is divided in sections like: after the literature review part, the next section presents the methodologies used, the variables and observations considered, followed by the results of applied methods and discussions about the results. The final part represents the conclusions, the limits of this study and further research.

Literature review

In 2015 (Tudorache (Zamfir), 2015) a study that uses 2014 data from agriculture provides a general view of Romanian counties. In this study, the classification of Romanian counties is made using 33 variables from agriculture, without including macroeconomic variables. In another study from 2015 (Muhammad, Saba and Ghulam, 2015), data from 1975 to 2012 is used to identify the influence of agriculture in GDP by regression model. The results show that "the parameters estimate for Industry, trade and agriculture are showing positive and significant relation with GDP growth rate" (Muhammad, Saba and Ghulam, 2015). Another similar study from Nigeria (Olajide, Akinlabi and Tijani, 2012) show a strong relation between agriculture output and GDP taking into account a regression model applied on data from 1970 to 2010. For Nigeria, another study (Odetola and Etumnu, 2013) analyze data from 1960 to 2011 with methods like Granger causality test and demonstrate that "the agriculture sector has contributed positively and consistently to economic growth in Nigeria, reaffirming the sector's importance in the economy" (Odetola and Etumnu, 2013).

A study from 2019 (Toacă and Olărescu, 2019) show that agriculture production has a significant influence for other economic sectors and is considered for prediction of main macroeconomics indicators, using econometric models.

In 2020 (Mehta, 2020) a study from India with data from 1961 to 2016 (and econometric models) reveals that there is a strong relation between the production from agriculture and economic growth in India and shows that the "Economic Growth leads to Agriculture Production but Agriculture Production does not lead to Economic Growth in the long run" (Mehta, 2020). Another recent study (Ayuda and Pinilla, 2020) for Spain consider agriculture exports to have a "positive although moderate" impact in economic growth.

Methodologies, datasets and variables

Seeking a relation between a group of variables and another variable in order to group and describe a set of observations is a problem that can be solved in many different ways. The regression analysis is one of the most used methodologies to analyze the relations between variables, but for grouping a set of observations, cluster methods are required, like: partitioning algorithms, hierarchical clustering, density-based methods or soft clustering (like fuzzy clustering). Also, the dimensionality of datasets represents an issue. Among methods to reduce the number of variables, the principal components analysis provides the best results. This type of analysis is preferred in high dimensionality datasets, because, using a maximization problem (the maximization of variance contained by new variables), it reduces the number of variables to several new variables named principal components. The way that the maximization problem is applied provides several properties for principal components, like: principal components are uncorrelated one with each other and the first principal component takes more information from original variables than the rest of the components. On the other side, for unsupervised pattern recognition, clustering methods are used in general to group a set of forms so that the variability within clusters is minimum and the variability

between classes is maximum. There are hard-clustering methods, when each observation is allocated to one class and soft-clustering methods (like fuzzy) when each observation belongs to all classes, but with different probabilities. One of the most known and used fuzzy clustering algorithm is FCM - fuzzy c-means, where "the centroid of a cluster is calculated as the mean of all points, weighted by their degree of belonging to the cluster" (source: <https://www.datanovia.com/en/lessons/fuzzy-clustering-essentials/>). In R, this algorithm is implemented in cluster package (fanny function).

The main source of the dataset is the National Institute of Statistics (site: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>) available statistics (most variables), as well as the available data from the National Commission for Strategy and Prognosis (the GDP per capita at county level, site: <http://www.cnp.ro/ro/prognoze>). The variables considered are grouped in four categories: I. Cultivated area (hectares) of: pepper, potatoes, onion, beans, sunflower, wheat, orchards, green peas, barley, oat, corn, root vegetables, colza, soy, tomatoes, garlic, cabbage, eggplants; II. Production (tones) of: pepper, beans, sunflower, wheat, field vegetables, solar vegetables, garden vegetables, green peas, barley, root vegetables, colza, rye, soy, tomatoes, garlic, cabbage, eggplants; III. Production (tones) of: apricots, cherries and sour cherries, apples, nectarines, nuts, pears, peaches, plums; IV. Indicators like: GDP per capita in euro. All these variables are considered at counties level (41 counties were selected) and for years 2017 and 2018. The GDP per capita for all years is provided by National Commission for Strategy and Prognosis reports (because the analyzed reports are from May 2018 and December 2019, the values for GDP per capita in euro are considered prognosis values). The use of prognosis estimations is for computing and comparing clusters centroids, and for grouping counties. Finally, there are 2 major datasets (one for each considered year), each having 43 indicators from agriculture and one macroeconomic indicator (GDP per capita in euro).

Results and discussions

In this research, the principal components analysis is used on each dataset that represent the agriculture results. The table no. 1 shows the principal components analysis results in terms of total information contained by principal components.

Table no. 1 Principal components analysis results

PCA	%of info (3 PC)		
	cultivated area	cereals & vegetables production	fruits production
2017	68,24%	69,87%	78,69%
2018	67,89%	70,41%	79,84%

Source: Author's computations

In order to keep the comparability between years (but also, taking into consideration the scree plot and Kaiser criteria for choosing the best number of principal components), three components were considered from each dataset. From 18 variables that represent the cultivated area with vegetables, cereals and fruits, 3 principal components synthesize about 68% of information. Using 17 variables that represent the production of cereals and vegetables and keeping 3 principal components, the total information considered is about 70%. Also, from 8 variables that represent the fruits production, three principal components have between 79% and almost 80% of information.

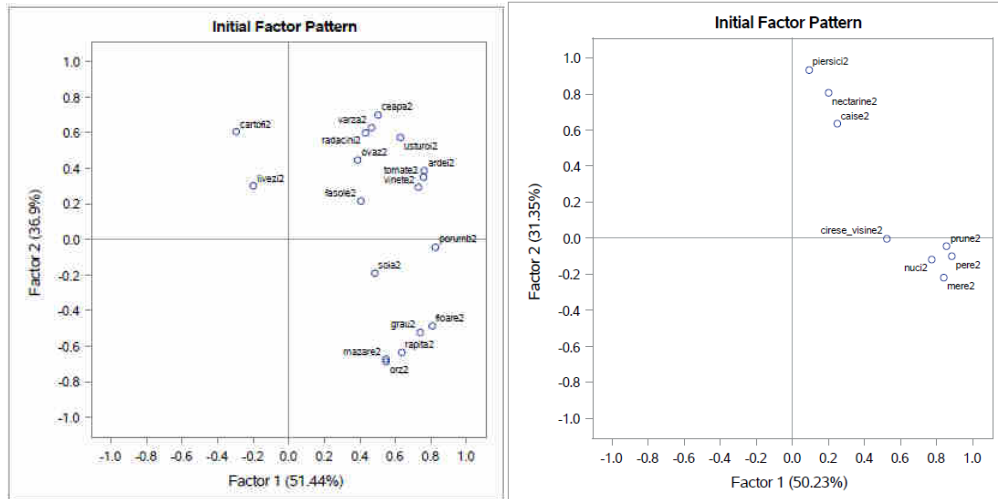


Fig. no. 1 Factor pattern (2018 dataset)

Source: Author's computations using SAS

The factor pattern matrix (graphically represented above - fig. no. 1 - for 2018, cultivated areas dataset in the left side and production of fruits dataset in the right side; SAS output) is the correlation between original variables and principal components. Using these correlations, each principal component may be named like: cereals_ha, vegetables_ha, beans_soy_orchards_ha for the dataset that represents the cultivated area for cereals, vegetables and fruits; vegetables_tones, cereals_tones, beans_rye_tones for the second dataset with the production of cereals and vegetables, and autumn_fruits, summer_fruits1, summer_fruits2 for the dataset that represents the production of fruits. In the first dataset (the cultivated area), the first principal component is correlated with most cereals (and few vegetables), so the name is cereals_ha, while in the last dataset, the new variable autumn_fruits is highly correlated with fruit production of apples, nuts, pears and plums, the second principal component (summer_fruits1) is highly correlated with the production of apricots, nectarines and peaches, while the last principal component is strong correlated with the production of cherries and sour cherries. The figure no. 2 shows the silhouette graph for 2017 dataset.

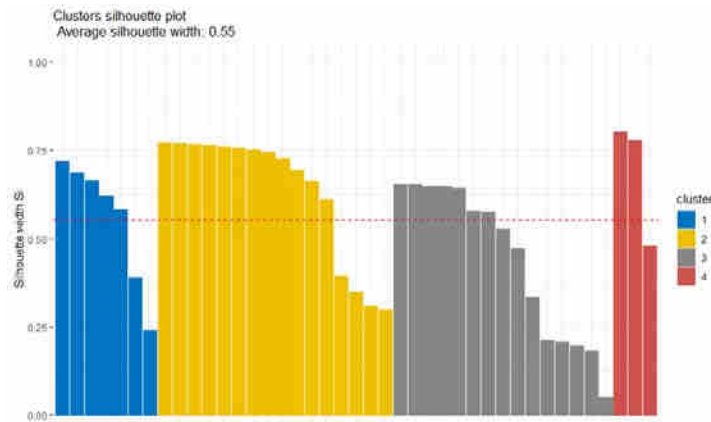


Fig. no. 2 Silhouette graph (2017 dataset)

Source: Author's computations using R

A negative value for silhouette width means misclassification for that county, while a closer to unit positive value represents a good allocation to class. No county from 2017 dataset is misclassified. Also, the nbclust function in R suggest that either 2 or 4 classes is the best number of clusters, according to the majority rule, so that 4 classes were selected, to obtain a more detailed analyze.

The table no. 2 is the classes structure for each dataset.

Table no. 2 Classes structures

Class	Year/number of counties	
	2017	2018
CLS1	7	7
CLS2	16	17
CLS3	15	14
CLS4	3	3

Source: Author's computations

There is a high similarity between 2017 and 2018, according to classes structure. Using each class average vector, it is possible to characterize classes as:

- one class have (in average) high cultivated areas with cereals, but low cultivated areas with orchards and low cultivated areas with vegetables, beans and soy. The production of cereals, beans and rye is among the highest, the production of vegetables, autumn fruits is high, the production of cherries and sour cherries is high, while the production of apricots, nectarines and peaches is low. The GDP per capita for this class is the lowest (in average). This is class 3 in 2017 and 2018 datasets.
- another class have counties with small cultivated areas for vegetables, large cultivated areas for cereals, the highest production for vegetables, cereals and apricots, nectarines and peaches, as well as the highest GDP per capita (in average). This is class 4 in 2017 and 2018 datasets.
- the other two classes have (in average) lower cultivated areas for cereals than for vegetables, as well as for beans and soy; a low production (in average) for vegetables, cereals, beans and rye, big production (for class 2) for autumn_fruits (apples, nuts, pears and plums) and the average value of GDP per capita between the two classes described above. These are classes 1 and 2 for 2017 and 2018 datasets.

The maps (fig. no. 3) represent the conclusion of fuzzy clustering.



Fig. no. 3 Clustering results (2017 - left and 2018 - right datasets)

Source: Author's computations

The counties colored in light yellow correspond to the first class described above, the green color is for class 4 in 2017 and 2018 datasets, while light blue and light red are for the classes from the middle. There is a high similarity between 2017 and 2018 datasets in terms of classes computed by fuzzy c-means method. The only notable difference is Covasna county that changed class from yellow color to light red color, meaning an increase of GDP per capita, the rest of production and cultivated areas having low changes from one year to another (except the fruits production, that is significantly higher in 2018 than 2017).

Conclusions

The main results of the study show the confirmation of the hypotheses proposed, that there is a relationship between GDP per capita and agriculture activities (cultivated areas and production). This relation is described in time (for two consecutive years) by comparing the GDP per capita (in average) with the main indicators that show (in average) the agriculture activities. Classes with counties having the most intense agriculture activity (in average), also have, in average, the highest GDP per capita (for both years), so the relation between agriculture and the macroeconomic indicator is positive.

But, taking into consideration the limitations for this study, few ideas should be considered like: the natural endowment of each county (some counties that have mountain terrain are expected to produce more fruits than cereals) and the weather from each year that has a high impact on agriculture activities (for example late winter affects the production of summer fruits, the lack of precipitations affects cereals production).

As further research, in order to identify how intense is the relationship between GDP and agriculture at county level and to compute the impact of agriculture activities in GDP (or economic growth), other methodologies could be applied, like econometric methods (maybe time-series).

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STRATEGIES FOR USING NITRATES TO IMPROVE SOIL PERFORMANCE AND SOIL C SEQUESTRATION

Lavinia Popescu¹ and Adela Sorinela Safta²

¹⁾²⁾ *The Bucharest University of Economic Studies, Romania*

E-mail: popesculavinia14@stud.ase.ro; E-mail: saftaadela19@stud.ase.ro

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Abstract

The work focused on the ability to practice strategies for the correct use of nitrates to improve soil quality. The use of crops with a high capacity to fix nitrogen in the soil, contributes to achieving the objectives of maintaining a low level of greenhouse gas concentrations in the atmosphere. The main result of the research is to identify the correct management of nitrates in improving soil quality, but also the use of crop rotation as a means of sequestering C at ground level, and last but not least, the aim of the next research is the risk management strategy in soil treatment through nitrate control, collecting data on the most efficient management models that will create the prerequisites for optimizing soil C sequestration by properly managing nitrates and using crop rotations based on soil quality, which will significantly contribute to improved performance and treatment strategies of soil applied in agricultural production and accordingly, it will provide information on reducing greenhouse gas emissions by using best agricultural practices in soil treatment. An important role is played by the implementation of best practices in the correct management of the land and the promotion of production models in order to increase the absorption of carbon in the soil. The aim of the following research is also to collect data that will create the conditions for the introduction of production models that will meet the challenges of climate change in the future, especially from the perspective of reducing greenhouse gases.

Keywords

Soil, environmental, agricultural, carbon emissions, management

JEL Classification

Q00, Q24, Q10, Q52, Q53

Introduction

Carbon sequestration contributes to the overall goal of lowering greenhouse gas concentrations in the atmosphere. One of the main objectives in the field of agriculture and rural development is to maintain a low level of greenhouse gas emissions generated by the

agricultural sector. The role of research in the field and studies have shown an important factor in the fact that a reduction of the carbon footprint per ton of food produced from organic farming compared to conventional agriculture, in principle, due to the abandonment of the use of chemical fertilizers and pesticides. The emphasis is on the possibility of facilitating the implementation and promotion of a responsible production model with the environment. During the research we tried to highlight issues that, in our opinion, are important for the development of the agricultural sector as part of the economy.

Research and development is important for all academic fields and industries. From this perspective, agriculture as a field is not an exception, having a special relevance starting from tradition. The study points out that, in scientific research, interdependence should be analyzed with other areas that have the role of improving the quality of research through innovation, so that agricultural sector research is complemented by various forms of academic knowledge that have proven to be vital, such as would be the quality soil. Approaching innovations in terms of methodologies applied in other sciences such as management, mathematics, even correlating soil degradation processes, determining the main pollutants, monitoring and controlling the soil, monitoring the soil quality status are relevant for agriculture. In the field of rural development, agricultural economy, economic environment, we need a clean environment that is based on the rational use of natural resources, increasing competitiveness by identifying the best practices in the field.

Literature review

Evaluation of carbon storage and land use strategies in functional and competitive market economies. The researches that will be carried out within this theme will focus on the description of factors through which to exploit the decarbonisation potential of agriculture and to promote an environmentally responsible agricultural model. At the same time, it is envisaged to improve the studies regarding the interactions determined by promoting the carbon dioxide storage at the farm level and the environmental requirements at the farm level, while analyzing the soil quality. The process of land abandonment has accelerated in Romania in the past years, resulting in the loss of biodiversity. Uncultivated land has increased by 50% since 2005, and, at 952,000 ha, constitutes 7% of the total agricultural area of the country (2010). The abandonment of agricultural land has far-reaching effects on ecosystem services, such as increased carbon storage, lower soil erosion, better water quality, and loss of traditional cultural landscapes. The hypothesis of carbon storage in the soil could be an option to mitigate climate change for agriculture, by managing the land and changing its use. In this study, we will consider the possibility of adapting the methods used to estimate carbon changes in the soil.

Materials and methods

The achievement of the objectives set in this research project requires the definition, construction and application of a specific research methodology focused on the evaluation of the costs and the economic-financial impact of the sequestration of 4% / year of the carbon dioxide at the farm level. In the agricultural field a main objective of the development of the rural area is to maintain a low level of greenhouse gas emissions generated by the agricultural sector depending on the local characteristics. The researches that will be carried out within this theme will focus on the description of factors through which to exploit the decarbonisation potential of agriculture and to promote an environmentally responsible agricultural model. At the same time, it is envisaged to improve the studies regarding the interactions determined by promoting the carbon dioxide storage at the farm level and the environmental requirements at the farm level, while analyzing the soil quality.

Agriculture and environmental issues

Consideration of soil properties, climate and crop management are vital characteristics from the perspective of emissions. But the result of this objective will be quantified by monitoring the surfaces on which green crops were established, as well as by quantifying the amount of plant biomass resulting from afforestation. Most agricultural soils contain too little natural nitrogen available to meet the crop requirement during the growing period. As a result, it is necessary to supplement the nitrogen naturally contained in the soil each year. Applying the right amount of nitrogen at the right time is the basic requirement of good fertilizer management. Nitrogen needs vary considerably in different crops, and within the same crop, with the level of harvest possible to be achieved in a certain conjuncture of climatic and technological factors. The production capacity of a crop, determined genetically, can be reached only under ideal conditions, when through the factors mentioned above optimal conditions for plant growth and development are achieved. Changes in crop management practices management practices that affect soil organic dynamics C are crop selection, high biomass crop rotation, crop residue management, nutrients and water management, use of organic fertilizers and management of organic soils and degraded land (Hutchinson et al., 2007; Petersen et al., 2013; Smith et al., 2012). The research revealed a difference in soil carbon when the C factors had the effect of applying a management method based on the interdependence between production and crop rotation, soil quality, carbon uptake, climate. At the same time, soil carbon changes are caused by land use changes.

The management applied through the modification of some practices of crop management have first and foremost an impact on the organic texture of the soil through the rotation and selection of crops, which can produce biomass by managing crop residues.

It is considered as a good agricultural practice to adapt the fertilization and the timing of its fertilization to the type of agricultural crop and to the characteristics of the soil. The assessment of the nutrient requirement is made according to the nutrient reserve of the soil, the local climatic conditions, as well as the quantity and quality of the predicted production.

Strategic option

Due to the specific behavior of nitrogen in the soil, fertilization with this nutrient and also the cultivation techniques that influence its dynamics in the soil should be conducted in a way that minimizes losses with percolating water, thus reducing the risk nitrate contamination of groundwater and surface water.

The risk of pollution is mainly related to nitrogen oxidation compounds. When not applied as nitric acid salts, nitrates and nitrites result from the biological oxidation of the relatively immobile cationic form NH_4^+ to a more mobile anionic form NO_3^- , i.e. the transition of nitrogen compounds from reduced forms of nitrogen to oxidized forms, a process known in literature under the name of nitrification process. This process is mediated by specialized chemotrophic microorganisms of the genera *Nitrosomonas* and *Nitrobacter*.

The use of extraradicular fertilizers as a fertilization process in modern agriculture is also a possible method of developing organic farming, due to the very small amounts of active substance applied.

In the development of these fertilizers it is noticed the introduction in the NPK type matrix of small quantities of substances with phyto regulatory role, such as:

- synthetic chemicals with phyto regulatory role;
- products derived from protein hydrolysates obtained by chemical, physical or enzymatic cleavage;
- extracts from algae or vegetable products;
- products derived from hydrolysates of vegetable origin, humic and / or fulvic acids and their soluble salts;

- metal chelates.

The land management for carbon sequestration is highlighted by soil carbon inventory, especially by the form in which it is kept, the capacity, the persistence and bulk density, the textural class of the soil. In certain areas, especially on soils with thin limestone substrate, there is an imminent danger of groundwater pollution. Depending on the local specificity, this danger should always be taken into account when applying organic fertilizers in such high risk areas. The calculation method regarding the contribution of nitrogen from organic sources is important for the assessment of greenhouse gas emissions from agricultural activities. Organic nitrogen can be used by crops only after its passage into an inorganic form through mineralization or gradual decomposition of organic matter from the soil, first in ammoniacal nitrogen and then in nitric nitrogen.

The ability of the soil to provide the nutrients needed for the plants varies depending on the type of soil, respectively its level of fertility;

The fertility level of a soil can be degraded if the cultivation technologies are incorrect or, on the contrary, it can be increased if cultivated in a way that improves its chemical, physical and biological properties;

A soil with good natural fertility and productivity can be depreciated by being poor in one or more nutrients or by degradation of some properties or can be totally destroyed by erosion phenomena; a soil with low natural fertility can become productive by correcting the limiting factors that prevent the normal growth and development of the plants (acidity, excess or nutrient deficiency, etc.). The main evolution factor for mineral forms of nitrogen is the ratio between carbon and nitrogen in fertilizer (C/N). A rational fertilization practice involves the acquisition and acquisition of technical-scientific information that will allow a relevant answer. Any nitrogenous fertilizer in organic form is mineralized as a result of the activity of bacteria present in the soil, ultimately resulting in nitric and ammoniacal nitrogen.

Loss of nitrogen in the form of gases in the atmosphere (Ng)

These losses can occur through different mechanisms, especially by denitrification and volatilization of ammonia on the surface of alkaline soils. Nitrogen is par excellence a plant-specific nutrient and is therefore found in different amounts in natural organic fertilizers, especially in the form of protein from animal manure. Rapid development of fertilization methods and technologies using fertilizers extraradicular and liquid ones were due both to the possibility of controlled application of according to the phases of vegetation, culture, agrofond and nutritional deficiencies as well increase cost efficiency indicators fertilization - economic results. Due to its peculiarities of geochemical behavior, it is difficult to manage both in monoculture and in isolation. Also, it is difficult to determine with sufficient precision the amount of nitrogen required for a certain crop during the active vegetation period, respectively to calculate the dose of nitrogen fertilizer to be applied for fertilization. It is considered as a good agricultural practice to adapt the fertilization and the timing of its fertilization to the type of agricultural crop and to the characteristics of the soil. The assessment of the nutrient requirement is made according to the nutrient reserve of the soil, the local climatic conditions, as well as the quantity and quality of the predicted production.

The conversion of nitrogen fertilizers into the soil, through the passage of nitrogen from one chemical form to another, can lead, in most cases, to losses of assimilable mineral nitrogen and to changes in soil reaction, which can reduce the efficiency of these fertilizers.

The table no. 1 shows that the soil with the richest culture in N is the one with soy, while other relatively more frequent crops are located in the middle area with 1/3 of N, so that for each one the method will be applied of the appropriate nutrient, as in estimating the level of the planned crops, the climatic characteristics of the place must also be taken into account, since they are decisive in the dynamics of the fertilizing elements in the soil and especially in the

mineralization of the organic matter and in the movement of nutrients in the soil, soil profile, below the rooting area.

Table no. 1 Specification of crops

Nr.crt.	Specification of crops	N	P ₂ O ₅	K ₂ O
1.	Autumn wheat straw 1: 1.3	26.5	13.7	16.4
2.	grain rye straw 1: 1	27.5	10.8	22.3
3.	grain oat straw 1: 1.5	28.5	11	31.2
4.	Corn grains: strain 1: 1.6	27.5	12.5	16.5
5.	Sugar beet roots: Leaves and parcels 1: 1	4.9	2.0	6.0
6.	Pea berry berries: 1: 1.5 edges	61.0	16.6	28.0
7.	Soybean beans: 1: 1.5 rods	70.0	22.5	34.0
8.	natural grass fan	24.0	5.6	18.0
9.	Natural grassland grass	6.5	1.4	4.5
10.	Hemp stems	10	8.5	17.5

Source: *Inpce*

The soil is a non-renewable resource that requires constant monitoring to prevent its degradation and to promote efficient management. The soil may degrade depending on many items. Of strategic importance is the type of fertilizer, the age and the technique of applying fertilizers with N, with the amount of nitric nitrogen resulting from mineralization of the organic matter from the soil and other organic residues incorporated into the soil as well as with the amount of nitrogen entering the soil on other ways. Solid fertilizers can produce pollution only in the case of heavy rains that occur immediately after application.

$$DN = Nc - (Ns + Na + Nb + Nr) + (Ni + Ng + Nl) \quad (1)$$

where:

- DN is the nitrogen dose from fertilizer (organic + mineral) for the expected harvest, in kg / ha;
 - Nc is the nitrogen requirement for the expected harvest, in kg / ha;
 - Ns is the nitrogen available from the soil during the vegetation period, in kg / ha;
 - Na is nitrogen from irrigation water and from the atmosphere (powders, precipitation), in kg / ha;
 - Nb is nitrogen from biological fixation, in kg / ha;
- There is no nitrogen from the mineralization of the plant residues of the previous crops, in kg / ha
- Ni is nitrogen lost by immobilization by soil microorganisms, in kg / ha;
 - Ng is nitrogen lost through volatilization, including denitrification, in kg / ha;
 - Nl is nitrogen lost through surface runoff and leaching, in kg / ha.

Ni is the nitrogen lost by immobilization by soil microorganisms, in kg / ha, Ng is the nitrogen lost by volatilization, including denitrification, in kg / ha; Nl is the nitrogen lost by entrainment with surface runoff and by leaching, in kg / ha. Nitrogen released from the soil (Ns) Nitrogen from the soil is found, almost entirely, in organic matter, and only a small fraction of it is found in a form immediately assimilable to plants.

The prohibition periods for applying fertilizers on the ground are defined by the time interval when the average air temperature drops below 5°C. This interval corresponds to the period when the requirements of the agricultural crop relative to the nutrients are reduced or when the risk of percolation / leakage to the surface is high.

When using nitrogen fertilizers in a predominantly organic form, it must be borne in mind that nitrogen, before being absorbed by plants, must undergo mineral form through a series

of transformations they undergo in the soil. Therefore, these fertilizers are applied with sufficient time before the time of maximum absorption by the crops (Fig. no. 1)

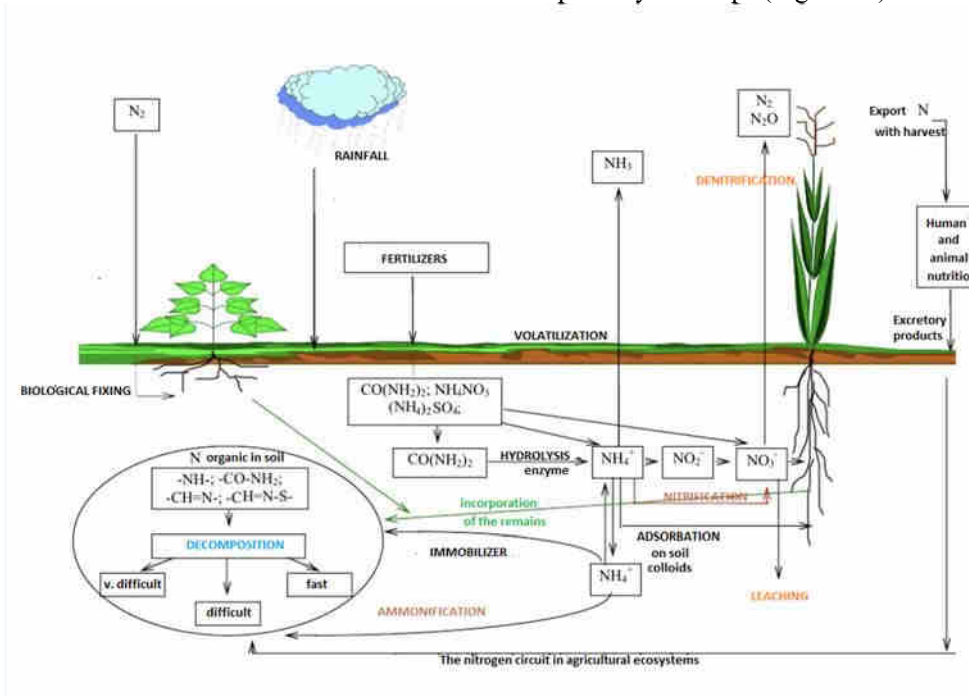


Fig. no. 1 The nitrogen circuit agricultural ecosystems

Source: INPCE

When applying chemical fertilizers it is necessary to take into account the crop specific requirements it is recommended to be applied according to the ratio between nutrients.

For example: those where P₂O₅ predominates are more suitable for pre-sown grain cereals, those with a nitrogen ratio are suitable for technical crops, etc. Soil properties influence the use of fertilizers: larger quantities of fertilizers can be administered on heavy soils than on light ones; fertilizers with alkaline physiological reaction will be applied on acid soils, and fertilizers with acid physiological reaction will be applied on alkaline soils.

The periods when applying organic fertilizers should be determined according to different conditions as early as possible, during the crop growth period, to maximize crop nutrient uptake and minimize the risk of pollution.

On the heavily degraded meadows, only one crop is obtained during the year, and in the case of other meadows two or three harvests, but with the highest weight at the first harvest.

The application of organic fertilizers on permanent pastures (pastures and meadows) is subject to the condition of not exceeding the dose of 170 Kg N ha⁻¹ year⁻¹ and not being applied during the prohibition periods.

Member States may require the mention of calcium, magnesium, sodium and sulfur content fertilizers with secondary nutrients and, if the conditions provided for in Article 17 are met, from the fertilizers with main nutrients placed on their markets, shall be expressed as follows:

- (a) in the form of oxide (CaO, MgO, Na₂O, SO₃) or
- (b) in elemental form (Ca, Mg, Na, S) or
- (c) in both forms.

For the conversion of calcium oxide, magnesium oxide, sodium oxide and sulfuric anhydride content into calcium, magnesium, sodium and sulfur content, the following factors are used:

- (a) calcium (Ca) = calcium oxide (CaO) × 0.715;

(b) magnesium (Mg) = magnesium oxide (MgO) $\times$ 0.603;

(c) sodium (Na) = sodium oxide (Na₂O) $\times$ 0.742;

(d) sulfur (S) = sulfuric anhydride (SO₃) $\times$ 0.400.

The value withheld for the declaration is the value rounded to the nearest decimal place both when the content is expressed as oxides and if it is expressed in elementary form.

acid soils with pH <6.5;

- neutral soils with pH = 6.5 - 7.5;

- alkaline soils with pH > 7.5.

Many studies have evaluated cropland, grassland and marshland, while Schmidt (2008) evaluated the transition from natural land to agricultural land. For example some studies the fact that a change factors from permanent cover to an annual harvest, plus simultaneous factors for the changes of the crop management involves the achievement of a balance between the soil carbon and its kinematic function of the use and degradation of the soil. Not infrequently the concern is to follow the cyclicity of the crops used depending on the texture of the soil. But a technical formula cannot be validated precisely because depending on the periods of maintenance of the soil with fertilizers these techniques have to be controlled according to external factors.

Consideration of soil properties, climate and crop management are vital characteristics from the perspective of emissions. The following scenarios are aimed at the interaction between crop growth, soil carbon, nitrogen needs and climate.

Most agricultural soils contain too little natural nitrogen available to meet the crop requirement during the growing period. As a result, it is necessary to supplement the nitrogen naturally contained in the soil each year. Applying the right amount of nitrogen at the right time is the basic requirement of good fertilizer management.

The EU political context

The pollution of the environment by improper application of fertilizers is considered to be in most cases determined by human negligence. In this context, several Member States have introduced national provisions limiting the cadmium content in phosphate fertilizers for reasons related to the protection of human health and the environment, by implementing Regulation (EC) 2003/2003 on chemical fertilizers Regulation (EU) 2019/1009 laying down the rules for making EU fertilizer products available on the market.

Results and Discussion

Carbon sequencing is that storage function at the soil level, which highlighted the importance of determining soil quality and interdependence with the climate ecosystem. Soil is defined as a strategic carbon reservoir, which contains more carbon than is found in the atmosphere and in the terrestrial vegetation. The accumulation of stabilized carbon in the soil requires a control in terms of storage. The quantity and type of residues produced by plants are also influenced by the addition of fertilizers, which are indispensable for sustaining the productivity of plants in agricultural systems. In addition, by their effect on the microbial activity, the carbon contributions of the plants, the climatic factors, such as the temperature solution.

In order to reduce the negative effects of climate change on agriculture, risk management tools need to be implemented to limit the negative effects of natural disasters on agricultural production. Accounting for a concept of stepping up processes in the agri-environment field in order to prefigure the application of greener models in agriculture, while reducing the level of GHG, is not to be neglected.

The quality of the soil is determined by the texture of the soil that must be maintained through the agricultural practices, in order to manage a possible degradation due to the climate or the vegetation. The calcium carbonate content is strongly correlated with the quality influenced

by the distribution of clay in soils, the geographical area as well as perhaps the most important of the material residues. Thus, it can be seen that the distribution of nitrogen in the soil is closely related to the organic carbon, vegetation and climate as well as the texture of the soil. Therefore, the use of land, the use of innovative agricultural practices based on a management designed on the basis of local data and adapted to agricultural production can be a factor in improving soil performance. In our opinion, the agricultural lands in general and especially those in Romania have considerable potential for carbon capture and storage. It is vital to have improved agricultural systems that efficiently utilize nutrient resources, increasing not only the amount of carbon in the soil, but also the biodiversity and resistance of agriculture even to climate change. As a rule, carbon stocks in agricultural soils can be increased by adapting certain agricultural activities. Research also shows that carbon absorbers are just as important as reducing emissions. Maintaining and further improving the natural absorbents represented by soils, agricultural land and coastal wetlands are essential.

Conclusions

One of the main objectives in the field of agriculture is to maintain a low level of greenhouse gas emissions generated by the agricultural sector. Farmers must continually improve the techniques adapted to the new challenges of keeping the soil covered, to use techniques for managing the environment of the land to help maintain the carbon in the soil. Research has revealed that soil carbon changes are caused by land use changes. In conclusion, we can say that, conservation and improvement of the state of natural resources and habitats by encouraging the use of innovative, environmentally friendly agricultural production methods that come to protect the environment, biodiversity conservation and the improvement of water, soil and natural landscape quality are vital. Prioritizing an action behavior in terms of vulnerabilities favors the orientation of agriculture through more environmentally responsible methods. In part, the need for innovation in agriculture will contribute to the understanding of the economic-financial impact of the storage of a percentage of carbon dioxide at the farm level and to the definition of the demands imposed by achieving a functional and highly competitive market economy. The role of the research is also the possibility of developing agricultural production models that will significantly contribute to the decarbonisation of agriculture.

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MONITORING TRANSFORMATION OF BIOECONOMY ENTREPRENEURSHIP IN ROMANIA

Steliana Rodino¹, Alina Butu², Carmen Gheorghe³ and Marian Butu⁴

¹⁾ *The Bucharest University of Economic Studies, Romania*

^{2) 4)} *National Institute of Research and Development for Biological Sciences, Bucharest, Romania*

³⁾ *National Institute of Economic Research "Costin C. Kirițescu" – INCE, Romanian Academy, Bucharest, Romania*

E-mail: steliana.rodino@yahoo.com; E-mail: alina_butu@yahoo.com;

E-mail: carmen.adriana@ince.ro; E-mail: marian_butu@yahoo.com

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Abstract

In the context of shift towards bioeconomy, ensuring the food security under limited territorial resources is a challenge for any national economy. The policies in the field of innovation, small and medium-sized enterprises and entrepreneurship can play a major role in stimulating business and innovation, thus increasing the productivity which in turn leads to well-being and job creation. Entrepreneurship directly influences innovation, competitiveness and economic growth is recognized.

At the same time, in order to make a significant contribution to the revitalization of the national economy, the concept of multifunctional and diversified agriculture, as a key sector of bioeconomy, will have to be included in the future business models.

This paper constitutes an overview of the Romanian enterprise ecosystem with a focus on bioeconomy field. The companies with activity in the field of bioeconomy were identified quantitatively, for an estimation of the proportion of the bioeconomy in the national economy. With a proper awareness raising from the policy makers and effective collaboration between research organizations and business environment, the entrepreneurship in bioeconomy sector can only bring benefits for both society and economy.

Keywords

Bioeconomy, Romania, entrepreneurship, bio-resources.

JEL Classification

Q1, Q2

Introduction

The transition to the bioeconomy has now become a center of interest for the strategic program of governments around the world. The bioeconomy includes the basic sectors of the national economies, sectors that provide materials and products that come from renewable raw materials, based on the sustainable exploitation of bioresources. Bioeconomy is based on "the use of research and innovation in the biological sciences to create economic activity and public benefit" (White House, 2012).

The crisis generated by the appearance of COVID 19 and the declaration of the pandemic state, brought into question the limitation of the free movement of persons and implicitly the difficulty of the movement of goods, the stopping of the economic activity of some companies in the manufacturing and processing industry. Currently, strategic working groups focus on identifying locally available resources to reduce import dependency and ensure food security. More than ever, ensuring immediate food needs means profound reorganization in national economies.

The restarting of the national economies will have to be based on a transformation of all paradigms, through the transition to higher added value activities, more efficient from the point of view of the use of resources, with an accentuated specialization in the direction of the use of existing resources at territorial level. Such a reorientation, however, needs an objective evaluation of the determining factors, by drawing a map of the existing innovation system, realized by identifying the potential enterprises with the role of catalysts in restarting the engines of the economy, firstly in basic sectors of production.

To support the development of entrepreneurial ecosystems, this paper constitutes an x-ray of the Romanian enterprise ecosystem within bioeconomy field. The companies with activity in the field of bioeconomy were identified quantitatively, for an estimation of the proportion of the bioeconomy in the economy of Romania.

Review of the scientific literature

There are different definitions of bioeconomy, and all of these definitions can be described as enrolling in one of the following three basic directions (Bugge, 2016):

1. **Biotechnology**: this direction underlines the central role of research in the field of biotechnology and the application of the results in all sectors of activity.
2. The use of **bioresources** is centered on the efficient processing of the existing natural resources, including the principles of the circular economy and the creation of new value chains.
3. **Bioecology** is an approach based on the concept of sustainability, encouraging ecological processes by optimizing the use of nutrients in agriculture, avoiding soil degradation, oppressing the use of energy sources.

The bioeconomy brings new economic opportunities, by enhancing the emergence of business and encouraging entrepreneurship. It is characterized by increased resource efficiency, the diversification of the supply of energy sources, and investments in knowledge-based sectors such as biotechnology and genomics, plant breeding, and plant-based processing. Therefore, it is considered that bioeconomy is both associated sustainability goals and with innovation and the valorization of scientific knowledge (Hermans, 2018).

Bioeconomy is seen as a challenge and a strategic sector for Romania as well, being considered that an efficient, innovative and sustainable use of biological resources will be a job generator and will bring a new range of improved bioproducts on market.

Research methodology

Entrepreneurship as a factor of economic growth, social progress and employment is enjoying a special attention and support lately, special funding programs being launched to encourage

initiatives. The entrepreneurship indicators used in this paper are the traditional indicators reported in the literature, such as the number of companies, occupation and turnover by sector. Regarding the bioeconomy, a special set of indicators has not yet been defined to measure the performance or efficiency of this field.

The indicators used for measuring the bioeconomy, are at present the number of companies, the degree of employment, and turnover, taking into consideration the data reported for the different fields that are included in this sector of activity, as follows:

- agriculture, forestry and fishing,
- food industry (including beverages and tobacco)
- biobased products (textile, wood products)

Therefore, we have tried to identify these indicators at the level of our country based on official data extracted from National Institute of Statistics.

Results and discussion

The concept of bioeconomy was born following the technological advances registered in the life sciences in the last decades. The bioeconomy includes all the main sectors of primary production (agriculture, horticulture, fishing and aquaculture, plant and animal husbandry forestry, fisheries and aquaculture), food industry and those of the transformation of biological resources, such as the textile industry, wood processing and biorefining.

For translating the bioeconomy sector development into numbers and figures, it is considered that the bioeconomy sector is based on the following commercial production areas (Table 1), and their corresponding NACE 2 (Nomenclature statistique des activités économiques dans la Communauté européenne) codes:

Table no. 1 Category of production areas in Bioeconomy, by NACE 2 CODE

Category	Domain	NACE code
Primary production from bioresources	agriculture, forestry, fisheries and aquaculture	A 01, A02, A03
Processing and transformation industry	food, beverages, tobacco and feed; leather, wood, and straw based products	C10, C11, C12 C15, C16, C17
Chemical and bioenergetic industry based on alternative renewable resources	paper, textiles, chemicals and pharmaceuticals for the energy industry	C13, C14, C20, C21 D35

The bioeconomy focuses on the methods of converting raw materials into value-added products, with the aim of reaching an innovative economy, based on advanced knowledge, with low emissions. Thus, the bioeconomy includes innovative actions taken to produce food, feed, biological materials and bioenergy resources. Given the specific data available for our country we shall further on concentrate on the analysis of entrepreneurial ecosystem existent in the traditional sectors of bioeconomy, namely primary production and food and feed industry.

We started from the analysis of the distribution of the number of companies existing in Romania in the field of agriculture and processing industry. According to NIS data, the evolution of the number of companies tends to be unfavorable for the processing industry. After 2013, more than 50% of the total number of companies in the field of bioeconomy, are involved in the primary production of agriculture.

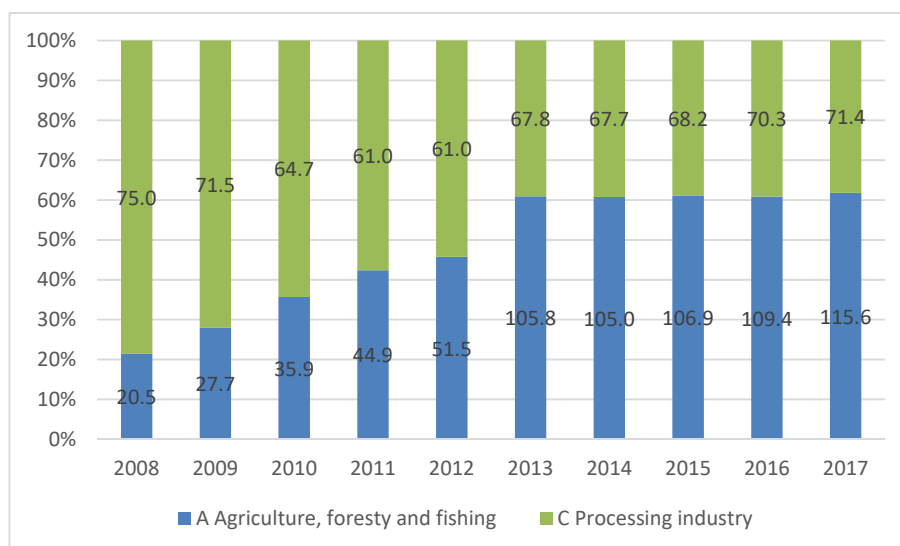


Fig. no. 1 Number of enterprises in 2018 (label data are expressed as thousand enterprises)

**Data source: NIS, INT110B*

It is already known that Romania has the most fragmented structure of the agricultural sector in Europe. According to official statistics, a high percentage of the agricultural holdings in Romania (over 70%) belong to the group of up to 2 ha. This translates into a low capacity to enter the market, the land being used and exploited for the purpose of obtaining goods for own consumption, without being a market-oriented economic activity.

The problem of the poor position of the farmers in the value chain derives directly from the structural imbalance affecting the agricultural sector in Romania, characterized by an excessive fragmentation of production.

The supply in this segment is difficult to adapt to the demand, as the agricultural producers tend to expand less in the sense of vertical integration (in the downstream sectors: processing or direct sales), thus limiting the opportunities to increase the value added of the production and to strengthen their market position.



Fig. no. 2 Active enterprises, NACE Rev.2, size classes of number of employees, by counties

**Data source: NIS, INT1010*

The number of active enterprises in agriculture reached 20.000 in 2018, with the highest concentration in Timis (1105), Constanta (970), Bihor (890) and Arad (774) (figure no. 2).



Fig. no. 3 Active local units, by NACE, by number of employees, by counties

**Data source: NIS, INT101S*

The number of active enterprises in Processing and transformation industry reached the highest concentration (Figure 3) in Bucharest Municipality (118,110) Cluj (34,875), Timis (26,250), Constanta (23,255).

Obviously, the entrepreneurial opportunities in Romania will come in the near future in the food field, rather than in other emerging sectors. The most important sub sectors within food and feed industry, by turnover and by number are represented in figure 4.

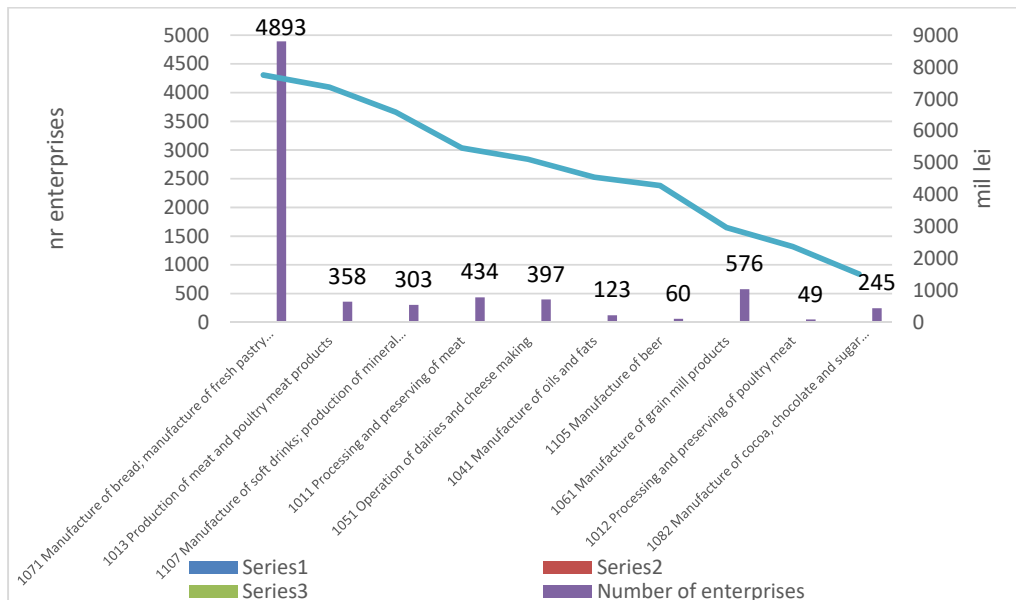


Fig. no. 4 Top ten Enterprises from Food, feed and tobacco sector by turnover

**Data source: NIS, INT101S*

Under the recent transformations suffered by the demand and consumption trends in food market, namely the high demand for safe, high quality, healthy, nutritious and pesticide free products, it is a given fact that innovation as well as technological advances will play a key role in the success of entrepreneurs, on increased sectorial competition.

Functional foods (foods rich in protein, microplants, fortified milk alternatives, etc.), the use of enzymes in production processes, the use of innovative environmentally friendly packaging, are just a few examples of good practices in the field of bioeconomy, which have been successful in the EU.

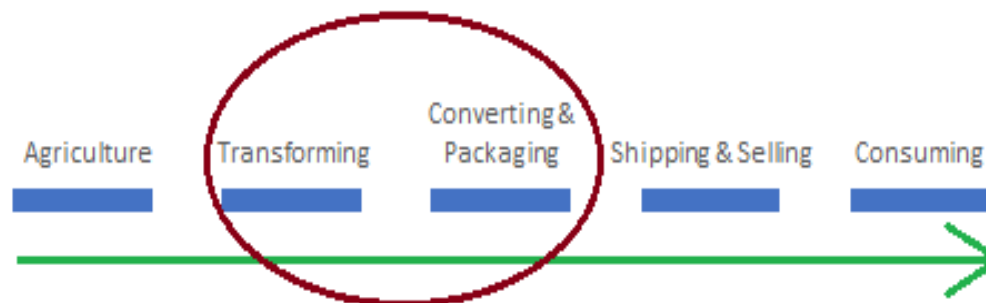


Fig. no. 5 Five-step-conceptualization of the food value chain inspired by Kuckertz 2019

Thus, it is necessary to pay particular attention to the stimulation of entrepreneurship in the direction of setting up some companies involved downstream on the value chains, diversifying the revenues by involving in the processing of the raw material from agriculture and processing of the resulting waste. The most active sub sectors of the value chain in agri-food value chains are transformation and converting and packaging (Figure 5)

Over the time, the economic units involved in bioeconomy related sector, did not necessarily need to focus on marketing strategies, innovation pathways and up to date technology, as they were profitable per se, owing traditional distribution channels and regulated markets (Lindgreen et al., 2012). Lately, the tendency towards creating value chains in agriculture, and its management, has emerged as a business survival strategy (Salvia, 2020).

Conclusions

To meet the current expectations of consumers, a key factor in an entrepreneurial strategy means offering high quality and differentiated products that reflect emergent agri food market. This will lead to a resumption of business in the future, in harmony with the new social trends and with the future profile of the consumer.

Long-term winners will be those who will have the vision and power to move the perspective beyond 2020 and will reposition themselves stronger and more confidently.

Applying the discoveries in the field of biotechnology can act as a catalyst for the leap of knowledge and the strengthening of the bioeconomy. The evolution of industrial and agricultural processes, towards the digitization of production, the use of genetic engineering and biotechnology, will lead to the emergence of a new type of new industrial entrepreneur, as well as agro-entrepreneurs.

Support to bioeconomy sector should be coupled with research and innovation funding. The EU allocated almost 4 billion Euro under Horizon 2020 programme and a budget of 10 billion Euro is planned under the next programming period that will start in 2021. With a proper awareness raising from the policy makers and effective collaboration between research

organizations and business environment, the entrepreneurship in bioeconomy sector can only bring benefits for both society and economy.

Acknowledgements

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HOW TO APPLY SELF-MANAGEMENT PRINCIPLES IN THE CONTEXT OF DIGITAL TRANSFORMATION

Benjamin Grab¹, Marieta Olaru², Mihaela Maftei³ and Ioana Surugiu⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: benny_grab@hotmail.com; E-mail: olaru.marieta@com.ase.ro;

E-mail: mihaela.maftei@ase.ro; E-mail: ioana.g.surugiu@gmail.com

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Abstract

Digital transformation has profound social and technological implications. Given its magnitude and depth, it fundamentally challenges traditional ways of doing business. In this context, organizations need to adopt innovative strategies for changing customer requirements, keeping new market participants at bay and remaining relevant in the digital era. Given the pressure on companies to continuously adapt and innovative, organizations need to find equilibrium between stability and flexibility that requires a mind-set which goes beyond a traditional command and control narrative. The challenges associated with corporate digital transformation has given rise to reinvention of self-management principles. In this context, a structured questionnaire among 200 experts from the financial services serves the following three distinct objectives: (1) introduce the general perception of participants on self-managed teams, (2) present risks and opportunities of its introduction, and (3) outline the implications on the wider organization in the context of digital transformation. Against the background of the research conducted, the results highlight general openness and a positive attitude towards self-management principles, the requirement of senior management support, investments in skilled personnel, smart expectation management, as well as the need for a holistic approach including all relevant internal and external stakeholders. The research results are part of a comprehensive research project on strategic management and digital transformation at the Bucharest University of Economic Studies.

Keywords

Digital transformation, self-management, organizational development, digital skills, innovation skill

JEL Classification

L21, L25, L81, L83, M16

Introduction

Considering the latest wave of digital transformation, a profound and fundamental disruption of the business environment becomes apparent. Traditional rent-seeking business models come under pressure from new competitors entering the scene. Former barriers of market entry are swept away by lower transaction costs and a shift in supply and demand driven by digital business solutions. Hence, organizations are forced to reinvent their ways of doing business, in order to stay relevant. At the same time, digital transformation is not a local phenomenon that affects only isolated parts of the world. It has developed into a global challenge which sees various peculiarities among different regions around the world. The pace of development and current level of sophistication differs from country to country which translates into a mixed profile in terms of risks and opportunities. Lastly, there is the social dimension of digital transformation that is driven by a new digital savvy generation entering the workforce, the collaborative nature of the internet, as well as the prevalence of social media platforms. The combined force of the different factors of influence impact on the organizational structure of businesses. In this context, self-management principles have gained momentum across the academic world as well as in the professional discourse. Therefore, the paper aims to elaborate on the current state of research and contribute additional research on the perception, opportunities and requirements for implementing self-managed work teams.

Theoretical Framework

When it comes to the country dimension of digital transformation, individual indexes help to shed light on the current situation across borders. The Digital Scoreboard is based on more than 100 indicators selected by European Commission services divided into thematic groups, which illustrate some key dimensions of the European information society that measures the performance of Europe and the Member States in a wide range of areas, from connectivity and digital skills to the digitization of businesses and public services. An important indicator is the Digital Intensity score that counts how many out of 12 technologies are used by each enterprise. Then they are divided into four clusters of digital intensity: Very Low (scores 0-3), Low (score 4-6), High (score 7-9), Very High (score 10-12). The hierarchy in the Digital Scoreboard follows the hierarchy in the European Innovation Scoreboard, which shows us that learning and digitization are closely correlated (Murswieck et al., 2019) (Fig. no. 1).

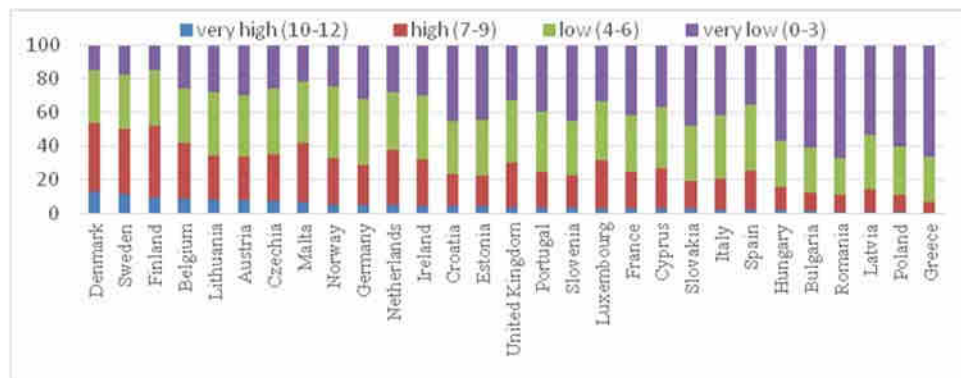


Fig. no. 1 Digital Intensity score for EU Enterprises 2019 (% of enterprises by level)

Source: Commission, E., 2020. Digital Scoreboard - Data & Indicators. [online] Digital Scoreboard.

Digital transformation has another important component, the social dimension. By exploring the dimension in more detail, it becomes evident that the substantial alterations in communication, collaboration, and social fabric force organizations to amend or reinvent their internal structures. In this context, self-management principles have regained momentum which feeds into the social dimension across three layers:

Personal layer: Digital skills are critically important not only for accessing the labour market but also for harnessing the benefits of the digital transformation that is currently underway. In Netherlands, United Kingdom, Finland, Denmark and Sweden at least half of the labour force in each of these countries have above basic skills, while, at the opposite pole, Romania and Bulgaria have half of the labour force with low or no digital skills (Fig. no. 2).

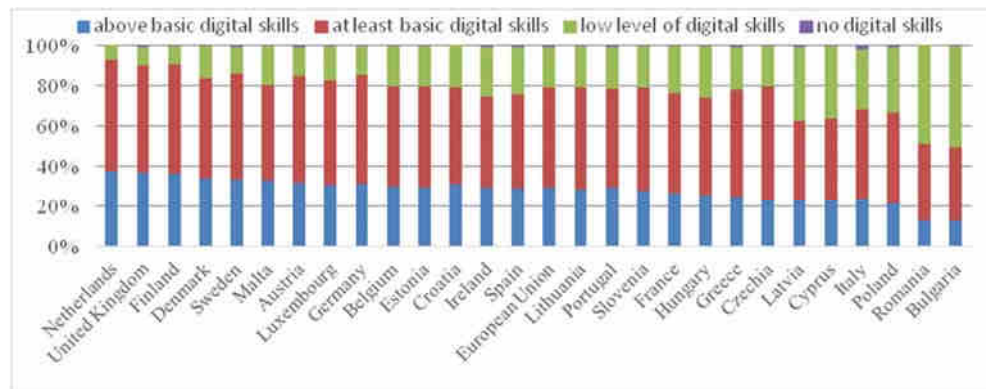


Fig. no. 2 Digital skills of the EU labor force, 2019 (% individuals, by skills level)

Source: Commission, E., 2020. Digital Scoreboard - Data & Indicators. [online] Digital Scoreboard.

When it comes to the individual dimension, it becomes evident that web-based services and solutions provide new ways of purchasing products, communicating among another, and collaborating in the workplace. People enjoy the collaborative power of the internet, where content and information can be shared within seconds. Transfer times and costs have sunk substantially allowing people to cooperate on common projects across borders and time zones. Connecting with people sharing the same interests is easier and the role of status is far less important than in the real world. All these components have significant repercussions for the business world. Alongside with new professions and knowledge, employees will be required to have new, improved skills and professions. Young people joining the workforce with the necessary skills for the digital economy want to see this flat hierarchy, collaborative nature reflected in their future employers. This stands in stark contrast to the command-and-control structures preserved in many companies. The fight for talent puts the younger generation in a better bargaining position. At the same time, organizations are forced to undergo fundamental changes to address the demands of their new hires. This, however, will only be mutually beneficial if the true benefits of such new organizations are clear and understood. In this context, value-driven organizations are likely to gain the upper hand over companies only paying lip service concerning their own transformation. (Hamel, 2012; Stahl, 2018, Grab et al., 2019a).

Team layer: Drastic changes in the technological environment as well as social ramifications are expected to have a considerable influence on the workplace of tomorrow. Current trends such artificial intelligence, internet of things, big data management and advancements in cloud computing will alter the course of many white- and blue-collar professions. With technological solutions gradually reaching a higher level of overall sophistication, work

activities mainly consisting of repetitive tasks are at risk of being replaced rather sooner than later. In this context, employees' expertise in operating digitalized processes and flows is critical, especially as according to recent studies (Marquardt et al., 2018), the main obstacle aligned with business digitalization is a lack of IT skills of the employees and availability of specialists. Manyika and Sneider (2018) describe the impact of technological solutions on close to 1000 professions, where almost half of all work activities could be replaced going forward. While this does not necessarily translate into a complete job loss, the implications for future work design is fundamental. Companies with self-managed teams' structure could use numerous possible ways to organize networks of employees to independently work towards a common target (Grab et al., 2019a). This requires individual teams to have a broader toolbox including problem-solving, communication and decision-making skills. Continuous learning is also expected to play a more prominent role going forward. All in all, the principles of self-management are likely to gain momentum given the challenge posed by digital transformation (Hamel, 2012; Landrum, 2017; Grab et al., 2018; Grab et al., 2019b).

Company layer: Considering the challenges discussed on personal and team level, it becomes evident that organizations are fundamentally tested to come up with new, innovative solutions for the future. For organizations and society in general, the innovation skill is vital to ensure development and competitiveness in new digital challenges, staff training and skills being important factors that lead to positive levels of innovation performance. There are two important points of consideration for companies to reinvent their organizations: trigger an innovation spirit and enhance their digital talent management. The most powerful force in business is culture, so successful leaders need to support, plan and grow a innovation culture (Maier et al., 2014). The focus needs to shift from internal office politics and power play to the requirements of the customer. At the same time, change is likely to be the new normal, therefore building adaptive and change-embracing organizations can be a key advantage. This also means that a drastic mind-set change among all employees and the willingness of the senior management to give up control is an acceptable base case. Managing a transformation of such magnitude is a potential make-or-break scenario that requires diligence, perseverance, planning and the right people. Attracting employees with the right skills, intrinsic motivation and willingness to learn is crucial. Setting up the right work structures can assist skilled employees in improving performance, transparency and employee engagement. The results of the practical research aim to highlight key preconditions for a successful implementation of self-managed work teams, as a means of supporting this transformation (Hamel, 2012; Schallmo et al., 2017; Ross, 2017; Newman, 2018; Grab et al., 2019b).

Research Objectives and Methodology

In addition to the theoretical research part consisting of an extensive desk study, the results of practical research conducted in the form of a structured questionnaire shall be introduced. The survey was executed with the help of more than 200 international professionals from the financial services industry during a four-week period in August 2019. Based on twelve research questions (fig. no. 3), the adopted methodology aims to follow three distinct objectives: (1) introduce the general perception of participants on self-managed teams, (2) present risks and opportunities of its introduction, and (3) outline the implications of the wider organization in the context of digital transformation. The first four questions establish an understanding of the population by gathering information on personal points such as gender, age, type of employment and country of residency. Followed by three questions centring on the general understanding of the effects of digital transformation. Questions 8-12 focus exclusively on the different facts of self-managed work teams and therefore form the backbone of the research results. Against this background, the key results of the practical research part complement the academic results of the desk study. While it primarily aims to

support the academic discourse on the research topic, important lessons can be derived for formulating a transformation roadmap on organizational level.

1-4. Personal questions		5. Based on your experience, digital transformation...		6. The main challenges of digital transformation are...	
Age Group	Gender	Positive effect on global economy	Increases competition	Lack of work-life balance	Uncertainty in the work space
Country of Residency	Type of Employment	Human-driven	Offers more choices for customers	Lack of data security	Technology dependency
		Is a global phenomenon	Technology-driven	Job losses	Lack of personal, social interaction
		Positively impacts on the way people collaborate		Information overload	Threat of surveillance
				Global competition	Human-robot relationship
7. The positive effects of digital transformation are...		8. How would you rate the following requirements for implementing self-management?		9. The biggest upsides of self-managed work teams are?	
Job enrichment	Improved means of communication	Time for implementation	Supportive change management	Employee engagement	Job enrichment
Participation in decision-making	Improved work-life balance	Skills of team members	Methodological support	Enrichment of innovation capacity	Flexible work design
Variety of products	Access to information	Setting objectives	Adequate resources	Swift decision-making	Fostering diversity
Market transparency	Global connectivity	Rules of engagement	Adequate support systems	Facilitated learning	Better customer-focus
Less hierarchy/status	More democracy in business	Clear relations with all stakeholders	Decision-making power	Cost efficiency	Flatter hierarchies
Easier transactions		Management support	Access to information	Improved team work	Better transparency
				Improved communication	
10. The biggest downsides of self-managed work teams are?		11. How would rate your own experience with self-managed team structures?		12. Going forward, I would like to work in a self-managed team	
Conflicting objectives	Lack of coordination				
Unclear leadership	Increasing requirements				
Lack of resources (technical & social)	Conflict of personal and team objectives				
Constant pressure	Responsibility				
Inner-organization culture clash	No need for various job profiles				
Success = Culture	Senior management requirements				

Fig. no. 3 Overview of research questionnaire and survey questions categories

Source: own illustration

Research Results

Following the insights provided through the desk study on digital transformation and the role of self-management principles as a potential cornerstone for organizational development. The structured questionnaire provides the followings results based on the initial objective of the conducted research:

General perception of participants on self-managed teams. With reference to the objective of defining the general perception of survey participants on self-managed work teams, the question focusing on the willingness of individual experts to work in such an organization setting gives supporting insights. As showcased in fig. no. 4, responses indicate high approval (combined value of „strongly agree” and „agree” answers) ratings of 75%. This translates into a positive perception of survey participants towards the concept of self-management in a business context.

Risks and opportunities of self-management teams in the context of digital transformation. In light of the issue of risks and opportunities of self-managed teams, question 9 and 10 introduce various elements to be qualified by survey participants (table no. 1). When it comes to the positive aspects of the concept, self-management scores favourably concerning flexibility of work design, innovation capacity and job enrichment. Having said that, all elements show at least a combined approval rating of 61%. The picture differs considerably when the downsides of self-management are taken into consideration. The highest combined approval ratings are

less pronounced, while showcasing a tendency towards teams struggling with too many requirements, constant pressure and potential cultural clash, if self-management is introduced in a hierarchical organization. Interestingly, survey participants do not believe that self-managed work teams have a negative impact on job losses as shown by a combined approval rating of 35%.

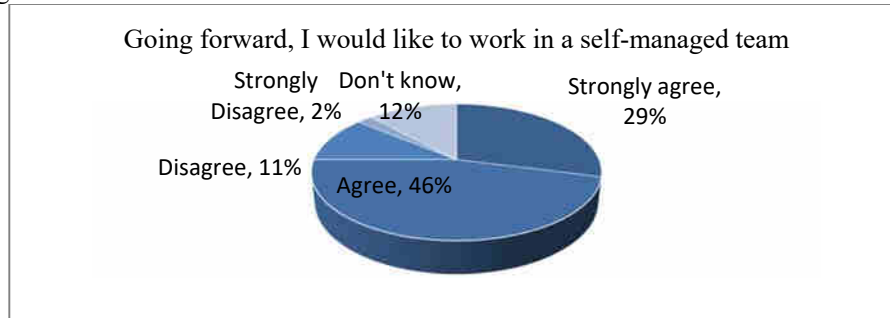


Fig. no. 4 Perception of survey participants towards willingness to work in self-managed teams in the context of digital transformation

Source: Own data processing based on research participants perception survey

Implications of self-managed teams on the wider organization in the context of digital transformation. When considering the introduction of self-managed teams, organizations need to factor in several important elements. Hence, question 8 focuses on the main requirements for such a roll-out. Given the generally high combined approval ratings of minimum 86%, all elements should be regarded as important (table no. 2). This asks for a holistic approach providing self-managed teams with adequate assistance, time and resources while senior management and wider organizational support shall be safeguarded accordingly.

Table no. 1 Upsides and downsides of self-managed teams in the context of digital transformation

Upsides of self-managed teams	Combined approval	Downsides of self-managed teams	Combined approval
Flexible work design	90%	Requirements for teams	79%
Innovation capacity	89%	Constant pressure	70%
Job enrichment	86%	Organizational culture-clash	67%
Flatter hierarchies	84%	Lack of available resources	66%
Employee engagement	80%	Assigning responsibilities	66%
Improved team work	80%	Lack of coordination	65%
Swift-decision making	79%	Unclear leadership structures	62%
Fostering diversity	78%	Conflicting objectives	61%
Improved communication	76%	Senior management requirements	58%
Better customer-focus	73%	Conflict of team and personal targets	57%
Better transparency	72%	Success depends on company culture	56%
Facilitated learning	68%	No need for various job profiles	35%
Cost efficiency	61%		

Source: Own data processing, based on research participants perception survey

Table no. 2 Requirements of self-managed teams, in the context of digital transformation

Requirements of self-managed teams	Combined approval
Setting clear objectives	96%
Provision of adequate resources	95%
Selecting team members with right skills	95%
Access to information	95%
Setting rules of engagement	93%
Provide decision-making power	92%
Senior management support	91%
Time for implementation	91%
Provision of methodological support	91%
Supportive change management	89%
Support from wider organization	89%
Provision of adequate support systems	88%
Define relations with all stakeholders	86%

Source: Own data processing, based on research participants perception survey

Conclusions

Digital transformation fundamentally impacts on the way companies compete in the market place. The rules of supply and demand, the degree of competition on a global scale and the pressure on organizations to be quicker, more efficient and increasingly customer-centric are essential questions for organizations in the digital era. Self-management is considered to be positive element that receives positive connotation by survey participants. However, the implementation comes with both risks (teams struggling with too many requirements, constant pressure and potential cultural clash, if self-management is introduced in a hierarchical organization) and opportunities (flexibility of work design, innovation capacity and job enrichment), which asks for a holistic approach focusing on the needs of the affected units as well as the wider organization during the introductory phase of self-managed teams. For future research it would be interesting to investigate to what extent self-managed teams could adapt to new forms of remote work (working from home, working from anywhere) and what are the risks and opportunities of organizing self-managed teams in the context of the new challenges of a pandemic that forces all organizations to reinvent the way employees work. Another point of interest would be to explore the perception of the international professionals regarding the coordination and the activity of the self-managed teams measured during or after such challenges undergo major changes.

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THE BEER MARKET IN ROMANIA. SITUATION AND OUTLOOK

Dumitrache Bogdan Bratoveanu¹, Marius Daniel Nicula², Roxana Sârbu³ and Silviu Stanciu⁴

^{1) 2) 4)} Dunărea de Jos University of Galati, Romania

³⁾ The Bucharest University of Economic Studies, Romania

E-mail: bbratoveanu@ugal.ro; E-mail: marius_nicula89@yahoo.com,

E-mail: sarbu.roxana@ase.ro; E-mail: sstanciu@ugal.ro

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Abstract

Beer is an alcoholic beverage with low concentration, becoming more and more popular among Romanian consumers. This paper proposes an analysis of the beer sector in Romania, in a European context. The data needed for the study have been collected from national and European statistics, the information provided by the associations of beer producers and from the specialized literature. The research carried out has shown that the Romanian beer industry is one of the largest national employers and an engine of economic growth for the local economy. The beer market in Romania is one of the top 10 beer markets in Europe, as level of production, collected taxes and the creation of new jobs. The sector has undergone a significant growth in the last years, an evolution that will continue in the next period, due to the increase of the internal consumption and to the opening opportunities for the product export. The national beer market is dominated by multinational companies, which accumulate over 85% of the total. The small domestic producers could use the market niche destined for the products of the specialty category, flavoured beer or beer mixes, which have an insufficiently exploited potential. The study results are of a theoretical value, being useful for the field of research and application, for the local companies, which can identify business opportunities in the sector.

Keywords:

Beer market, market niches, concentration, Romania

JEL Classification:

L13, Q13

Introduction

Beer is a popular food product, whose production and consumption are connected to the history of humanity. Being supposed to have appeared about 6000 years ago, beer is an

alcoholic drink traditionally obtained only from four ingredients: malt, yeast, hops and water. Producing of a suitable product depends on the quality of cereals and hops, which must meet the standards imposed by production. The oldest archaeological evidence on the production and consumption of beer seems to attest its presence around 3,500 BC. in the area of Babylon. Consumed also in ancient Egypt, at about the same time, it is known to have been imported from the Assyrians, and it was then locally produced. The beer at that time was like a thick, dark-coloured fat, without a large amount of alcohol, but very nourishing. Due to its special taste, it occupies an important place in the diet of the people, being one of the basic foods in the nutrition of the slaves who built the pyramids. The beer tax was introduced by Cleopatra who needed money for the construction of the pyramids, thus registering the first tax on drinks in the history of humanity (the Romanian Brewers Association, 2020). The development of the fast-moving consumer goods market in Romania exceeded the forecasts of the specialists and the expectations of the investors. European integration and adherence gave the specialized companies, with foreign capital, the security they needed in order to carry out consistent investments (Stanciu et al, 2020).

Beer is enjoying great popularity even today and the effects of consumption have attracted the attention of scientists. Numerous studies of the last decades have pursued the action of beer or its ingredients on human metabolism. There were positive effects due to both alcohol and bioactive substances originating in the raw material, but these effects were evident only under the conditions of moderate consumption (Zugravu, 2019).

Materials and methods

In order to carry out this study, we have used the data provided by national and European statistics, specialized information from publications of beer producer organizations. For the bibliographic documentation we have used studies from the specialized scientific literature, available on Clarivate Analytics, Google Scholar or ResearchGate. The collected information has been statistically processed and graphically represented. The results obtained have been compared with the specialized literature, in order to reach the best conclusions.

The European beer market

Europe is, to some extent, the homeland of beer and one of the most important producers, consumers and exporters of beer at an international level. According to the data provided by Brewers of Europe, quoted by FMGC (2020), the development of the European beer sector is constant, amid the growth of European consumption and production over the last 5 years. "The annual report on European trends in beer", produced by the Romanian Brewery Association for 2019 shows that the volume of beer production in the European Union exceeded 400 million hectolitres, for the first time in the last ten years. In 2018, beer consumption reached 370 million HL, growing in all countries of Europe, consumers being able to choose from a range of varied and specialized beer (Romanian Brewers Association, 2019). Annual report on European trends in beer shows a continuous growth on several key values in 2018: 10154 beer producers, which produce a production of 406,050,000 HL, of which 88786000 HL are exported. Most of the European transactions with beer take place at intra-community level (60.81%). The beer sector creates 2,300,000 jobs, unfairly distributed among brewing companies (5%), supply sector (12%), hospitality sector (71%) and retail sector (12%), while the beer sector generates over € 42 billion in the European budget. The European ranking of beer producing countries was dominated by Germany in 2018, with a long tradition in beer making and with a record production of 93.01 million HL, double to that of the occupants of the next two places, the United Kingdom, with a production of 40.48 million hl, and Poland, with 40.38 million HL (Figure 1). Poland ranked second in 2019 among the top European beer producers, changing places with the UK. In France, the number of breweries increased by 45%, from 1,100 to 1,600 HL. Slovenia and Ireland increased the

number of beers by 50% and respectively 25%. European exports have increased, with Belgium remaining the largest beer exporter in the EU, slightly surpassing Germany, while the Netherlands continues to export about 40% of its beer production to other parts of the globe. Romania remains in the top 10 beer markets in Europe, along with Germany, Poland, the United Kingdom, Spain, the Netherlands, France, the Czech Republic, Italy and Turkey, in 2018 ranking on the 7th place in terms of market volume (The European Brewers, 2020).

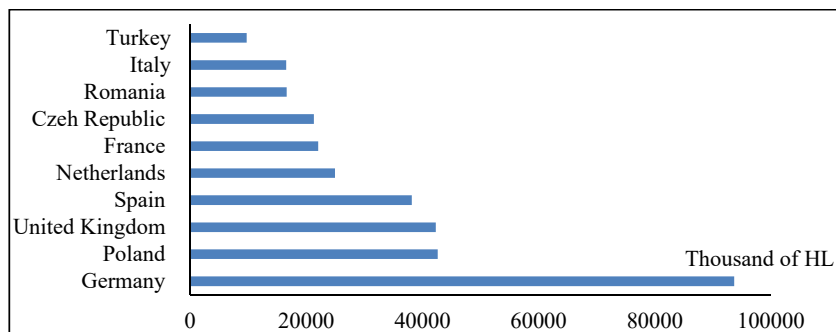


Fig. no. 1. Top 10 Beer producers in Europe (2019)

Source Authors, by using Statistics (2020)

Professional organizations in the beer sector

The Romanian Brewers Association founded in 2005, has established itself both locally and internationally, as a representative of domestic beer producers. The members of the association are important beer producers in Romania: Bergenbier SA, Heineken Romania, United Romanian Breweries Bereprod, Ursus Breweries and Martens, along with the microbrewery Clinica de Bere. Together, the five producers supply over 80% of the quantity of beer consumed in Romania. The Association also includes representatives of the raw material producers Soufflet Malt Romania and the Hop Producers Association. The five member companies of the Association provide approximately 4,000 jobs in the twelve breweries, out of which two micro-breweries (Stanciu, 2017). The production units of the association members are located in Ploiești, Constanța, Craiova, Miercurea Ciuc, Târgu-Mureș, Pantelimon, Timișoara, Buzău, Brașov and Galați, and the two micro-breweries are located in Cluj-Napoca and Timișoara. Since 2008, the Romanian Brewery Association has been part of European Brewery Organization, founded in 1958, Brussels. The members of the European professional organization are the national associations of brewers in the EU states, together with Norway, Switzerland and Turkey. The organization represents the interests of over 9,500 European beer producers in front of various international institutions and organizations and defends the interests of over 2 million employees, who have jobs due to the production and sale of beer.

Beer production and consumption in Romania

The Romanian beer industry is one of the largest employers in Europe and an engine of economic growth for the local economy, Romania ranking the 5th after Belgium, Great Britain, Austria and France, as jobs created directly or in the related sectors (Neagoe, 2019). Beer production represents a real stimulus for the Romanian economy, being one of the important factors in generating economic growth at the level of Romania, especially due to the national character: over 97% of the beer consumed in Romania is locally produced, and over 70% of the agricultural raw materials used for beer production is produced in Romania. The evolution of beer production in Romania has been shown in Figure 2.

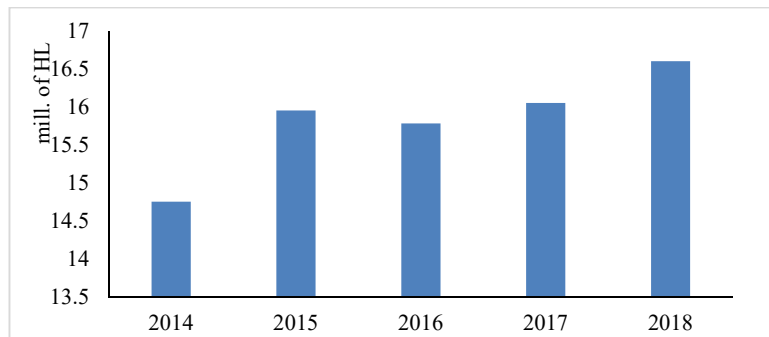


Fig. no. 2. Beer production in Romania

Source Authors, by using *The European Brewers*, 2020

The beer sector directly generates 5,973 jobs in the industrial sector (direct effects) and indirectly, over 84,900 jobs (Figure 3). Although there are many brands under which beer is sold in Romania, which creates the impression that there are hundreds of producers, the study conducted by Abrihan in 2018 for the publication *Start-up Cafe* showed that over 87% of the market was concentrated in the portfolio of only 3 companies, all with foreign ownership.

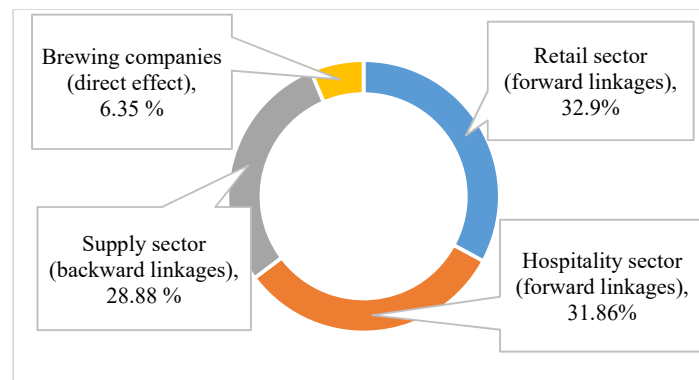


Fig. no. 3. Jobs created by the beer sector in Romania

Source Authors, by using *The Brewers of Europe*, 2020

The leader in this sector, according to the data from the Ministry of Finance, owned, among others, the brands Timișoreana, Ursus, Grolsch, Peroni Nastro Azzurro, Pilsner Urquell, Ciuc. The company, part of the Japanese group Asahi Breweries, achieved a turnover of 1.7 billion RON in 2017, reaching a market share of 43%. The second place is Heineken Romania SA, a Dutch company that markets in Romania Heineken, Desperados, Ciuc, Golden Brau, Bucegi, Neumarkt, Harghita, Hațegana, Silva, Gambrinus. Affligem, Edelweiss, Birra Moretti, Amstel, and brands in Romania. in 2017 business of about 1.16 billion RON, related to a market share of 29% RON in 2017 and a market share of 15%. The Dutch-controlled company from Molson Coors Netherlands BV sells in Romania the brands Bergenbier, Staropramen, Stella Artois, Beck's, Noroc, Corona, Lowenbrau. The following places were taken, considering the order of the turnover, by United Romanian Breweries Bereprod Ltd. (Tuborg, Carlsberg, Skol, Holsten, Guinness), with business of 392.4 million RON, Albrau Prod S.A. (30.8 million RON), Bermas SA (27.9 million RON), Lixid Project SRL (27.6 million RON), Martens SA (18.1 million RON), Good Brewery SRL (4, 1 mil. RON) and HB Traditional Brewery SRL (1.61 mil. RON). In total, the main 10 players in the market achieved 3.9 billion RON in 2017, representing 99.87% of the total sector. Concentration process in the beer sector is much stronger, compared to other sectors of food production in

Romania (Stanciu et al, 2015). In 2018, the investments of the Romanian Brewery members in the sector were estimated at 74.5 million Euro, the cumulative value over the last fifteen years reaching 1.54 billion euros. Annual contributions of the Brewers Association members to the state budget in 2018 was 255 million euros, and cumulative contribution in the last 15 years has exceeded more than 3.62 billion euros, the association promoting the concept of "clean business".

Key data on the beer sector in Romania in 2018

Romanians are big beer lovers and consumption increases every year. The beer market in Romania has had an average growth in the last years, an average increase of about 3% in volume. In 2018, Romanian producers distributed about 16.6 million HL, each Romanian consuming on average about 85 liters of beer. The preference of the Romanian beer consumers, according to the types of packaging used for the products, is shown in Figure 4. In 2018, beer packaged in glass continued the upward trend registered in 2017, its share increasing by 3.65% in the last four years. At the same time, the quantity of beer packed in the dose increased in 2018 by 2.38%, while the PET packaging registered another significant decrease, of another 3.37%. The types of beer consumed in 2018: Lager beer is the most important among the preferences of Romanians, with a weight of 93.61%. The specialty category, which also includes black, white, ale, red beer, unpasteurized beer etc., had a weight of 2.25%. Beer mixtures and flavoured beers awarded 2.27% of the domestic market and alcohol-free beer 1.87%.

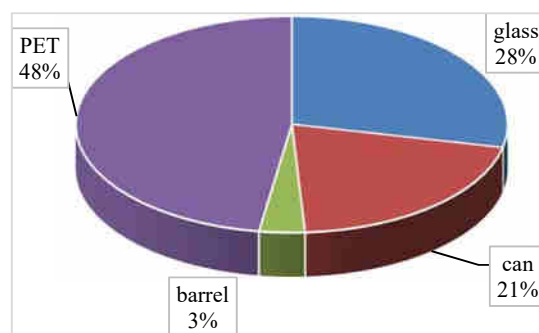


Fig. no. 4. Consumer preferences for beer, by packaging, in 2018

Source: Author, Data processed by the Association of Brewers of Romania, 2019

Regarding the dynamics of the segments, beer mixtures and flavoured beers increased by 8.23%, and non-alcoholic beer increased by 30%, during the year 2018 compared to the previous year. The number of producers increased to 56 in 2018, compared to 39 in 2017.

Key data on the beer sector in Romania in 2019

Over the last few years, Romanian breweries have been upgraded to European standards, with over 1.5 billion euros invested in modernizing production capacities. Most investments have been directed towards the sustainable development of the sector, in order to make water consumption more efficient in beer production, to increase energy efficiency, including by using energy from renewable sources, or to reduce the CO2 footprint. (Neagoe, 2019). The investment efforts of the Romanian Brewery members reached a record level in 2019, amounting to 96.3 million euros, increasing by 22 million euros compared to 2018. The cumulative investments of the Association members over the last 16 years have reached 1.62 billion euro. The level of the annual contributions of the Association members to the state budget is significant, in 2019 being 251 million euros, and over the last 16 years has exceeded

3.88 billion euros. The preferences of the Romanian consumers according to the types of packaging show that the structure of consumption according to market packaging has continued the last year's trends, the stars remaining the products packed in the glass and in the dose, with constant increases of 1-2% annually. In 2019, the weight of packaging for beer intended for domestic consumption, by types of materials, is shown in figure 5.

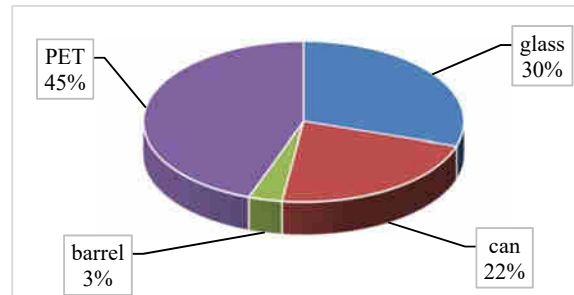


Fig. no. 5. Consumer preferences for beer, by packaging, in 2019.

Source: Author, Data processed Brewers' Association of Romania, 2020

Thus, the share of beer consumption packaged in glass containers has increased in total by 5.2% over the last 5 years. The consumption of beer packaged in the dose increased by 1.6% in 2019, while the products packaged PET underwent significant decrease of 3.1% in 2019. The draft beer consumption was relatively constant. The total decrease of beer consumption in PET packaging over the last five years has reached almost 9%. Last period, there has been a global tendency to reduce consumer preferences for products packaged in PET plastic containers and an increase in sales of beer packaged in the dose, respectively glass (Figure 6).

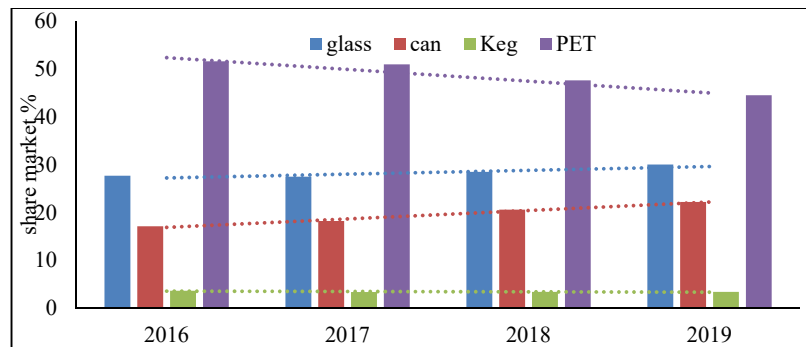


Fig. no. 6. Consumer preferences for beer, depending on the packaging (2016-2019)

Source: Author, Data processed Brewers' Association of Romania, 2020.

Lager beer continued to be the most important among Romanians' preferences even in 2019, with a share of 93% from total consumption. Beer mixes and flavoured beers have 3% of the market and the specialty category, which includes, among many others, black, unpasteurized, white, ale, red beer, 2.2% of the market. Alcohol-free beer had a share of 1.7%. Regarding the dynamics of the segments in 2019, the mixes of beer and flavoured beers increased the most, by 32.5%, while the non-alcoholic beer underwent a slight decrease of 8.2%. Consumption for the other segments remained relatively stable (Figure 7).

Number of beer producers increased to 68 in 2019, compared to 56 in 2018. Imports during 2019 underwent a slight decrease of 0.04 million HL, reaching a total of 0.5 million HL. The number of beer producers increased to 68 in 2019, compared to 56 in 2018. Imports during

2019 underwent a slight decrease of 0.04 million HL, reaching a total of 0.5 million HL. The local beer market has a profound national character, the share of local production being about 97% of the domestic consumption.

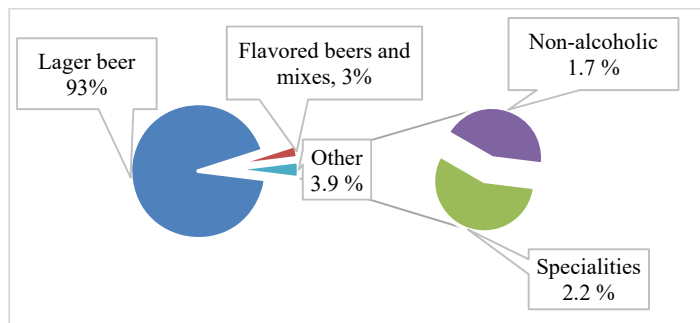


Fig. no .7 Beer assortments preferably consumed by Romanians.

Source: Authors, by using the Brewers Association of Romania, 2020.

Exports decreased slightly in 2019, by 0.05 million HL compared to the previous year, reaching a total of 0.49 million HL. Romania has imported significant quantities of beer in the last years, the trade balance being permanently unbalanced (Figure 8). Germany is the most important supplier of hops and beer for Romania, according to the data transmitted by the National Institute of Statistics, at the request of Capital (2015). According to the RoAliment study (2020), which cites data provided by the European Brewers Association, craft beer can be a growth engine for the Romanian beer industry.

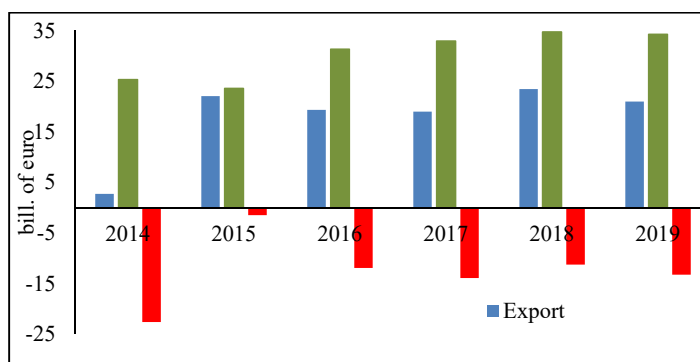


Fig. no.8. Romania's beer foreign trade

Source Authors, based on NIS data, 2020

In 2018, only 50 micro-breweries were operating in Romania, the number of which almost doubled compared to the previous year (30 functional businesses registered in the field). Although this market niche has made progress at national level, the interest of Romanian producers is still low, compared to other European states. The research made by European specialists have shown that the United Kingdom (with over 2,000 businesses in the field), France (1,400 units) or Switzerland (over 900 units in profile) can be models for small domestic entrepreneurs.

Conclusions

The Romanian beer industry is a dynamic sector, which is trying to adapt to the demands and changes of the Romanian consumer's preferences. Romania has begun to emerge as a beer exporter with the refurbishment and optimization of the big factories activity by the

multinational companies on the market, which started to produce not only the traditional Romanian brands, but also the international brands on the local market. Currently, 4 large producers are present on the Romanian market, belonging to groups with an international presence in the beer sector, which have developed large production capacities. Micro-factories, specializing in niche segments on the market, may represent opportunities for Romanian beer producers.

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CHINA'S TRANSITION TO A KNOWLEDGE ECONOMY INSTITUTIONAL MECHANISMS, PUBLIC POLICIES AND PRIVATE INVESTMENT

Adrian Bazavan¹

¹)The Bucharest University of Economic Studies, Romania

E-mail: adrian.bazavan@stud.ase.ro

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Abstract

This study identifies and describes the underlying mechanisms, structural causes, public policies and institutional arrangements that drive China's transition towards a more innovative economy. It highlights the key characteristics of the national innovation system, in respect to funding for research, government's role and public policies, inbound and outbound foreign investment as well other factors. The study does not attempt to evaluate how innovative China is, but explains how innovation actually occurs in China.

China's technological progress relies on unique mix of liberalization, imitation, incremental innovation, strong R&D spending, burgeoning market scale, competition between local governments and strong central policies. Progress is uneven, as several technological sectors and administrative regions are global leaders, whereas others fall far behind. Elements of this landscape might be of use to other developing economies. However, due to the peculiarity of China's, including its economic and demographic scale, as well as its political system, its solutions might only fit China.

Keywords

China, innovation policy, R&D expenditure, foreign direct investment, high-tech exports

JEL Classification

H50, L24, O25, O38

Introduction

China's gross expenditure on research and development (GERD) is increasing year by year, has exceeded that of the European Union as a whole in 2014 and is predicted to exceed United States by 2020. According to *Global Innovation Index 2017* (Dutta, Lanvin, and Wunsch-Vincent) China (without Hong Kong) became the 22nd most innovative country in the world, and the only middle-income nation in Top 25. Gaps are narrowing, but China still has a long way to catch-up in order to become a leading innovative economy.

This study aims to identify and describe the mechanisms, structural causes, policies and institutions behind China's transition to a more innovative-driven growth model. The main areas to be explored are: funding for research; governmental policies; influence of foreign companies; investments abroad and others. It is not in the scope of this paper to measure the performance, quality or level of innovation. The paper will not address the question "How innovative is China?", a legitimate research topic which is due to further endeavors. Instead, this paper's main question is "How does China innovate?"

Literature review

What is innovation?

The Austrian scholar Joseph Schumpeter is the forerunner of the study of innovation, concept that he placed at the core of his *Theory of Economic Development* (1934). He defined innovation as "creative destruction" – the process through which novel methods, products and ideas are transformed by firms and entrepreneurs into economic outcomes, resulting in the creation of new industries and markets and the destruction of old ones. Hage and Rogers Hollingsworth (2000) introduced the concept of "idea innovation network", distinguishing between different types of research: basic, applied, product development, production research, quality control research, and marketing.

The Organization for Economic Cooperation and Development classifies innovation on the basis of where it occurs into: product, process, marketing and organizational (OECD/Eurostat 2005). It might be incremental, which is to make gradual improvements over previous methods and products, or radical, which is to create new concepts and technologies that are highly different from the previous ones and have the potential to significantly change industries, and even create new industries whatsoever. Obtaining different types of innovation involves different degrees of difficulty, starting from the easiest - process innovation, following with incremental innovation and finally, the hardest, radical innovation (Li, 2017).

Innovation as a driver for economic growth and "catching-up"

Economic growth is the result of changes in production inputs, technological progress and productivity level, while the latter two are strongly related (Solow, 1957). Developing countries make efforts to "catch-up" with advanced economies, aiming to reduce income and technological gaps (Lee, 2013). During incipient and intermediary stages of catching-up, factor accumulation is highly important, including but not limited to machinery procurement, increase of human capital, infrastructure and constructions. At this stage, importing mature technology is the only way to narrow the technological gaps. Domestic innovation is still too costly, time-consuming and not feasible whatsoever. As the economy develops further and reaches middle-income level, the marginal effects of investments in factor accumulation gradually diminish (Liu et al., 2017). In order to maintain economic growth and momentum for transition towards high-income level, a country requires a different set of strategies. Otherwise, it risks to fall in the middle-income trap, the same way as it happened to several countries in Central and South America or the Middle East (Gill and Kharas, 2007).

How does innovation occur?

The National Innovation System (NIS) it is the most widely employed framework in innovation studies. It can be defined as "the network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies" (Freeman, 1987). NIS thus puts innovation in a specific national institutional context where innovative players at different levels are in constant interaction. These interactions constitute the very fabric of the system and are shaped by factors such as culture, institutional arrangements, policies etc (Nelson, 1993). The main innovative players are firms, as they have the incentive to seek, store and accumulate innovation capabilities. However, their ability to innovate is influenced by interactions with a broad array of external organisations, state and private actors, suppliers, customers, markets etc (Li, 2017).

Methodology

Informational input is based on an extensive review of the most recent academic works covering world innovation in general and Chinese in particular, both from international and Chinese sources. Giving the highly dynamic nature of the topic under research, academic understanding has a significant temporal delay against empirical reality. For this reason, in general, it uses only academic works and data newer than 2014. However, it is well understood that the theoretical framework and fundamental concepts are based on earlier literature, beginning with Schumpeter's *Theory of Economic Development* (1934).

In order to assess governmental perspectives, a collection of official policy documents were analysed, as well as political statements from news articles and think-tank reports, in China, the United States and European Union.

Statistical data is collected from *China S&T Statistical Yearbook* (Ministry of Science and Technology), as well as international databases: *World Economic Outlook Database* (IMF, 2018), *Main Science and Technology Indicators* (OECD, 2018) and *UIS online database* (UNESCO Institute for Statistics, 2018). Very useful were also composite measurements such as *The Global Innovation Index 2017* (Dutta, Lanvin, and Wunsch-Vincent, 2017) and *The 2017 EU Industrial R&D Investment Scoreboard* (European Commission), which offer analysis on a large set of input and output factors, as comparisons among countries.

The same resourceful as secondary sources were on-site visits and interviews. I have visited industrial parks, high-tech companies, investment firms, government agencies and start-up incubators on a series of field-trips to China's major innovation clusters: Beijing, Guangzhou, Hong Kong, Shanghai, and Shenzhen. A series of structured, semi-structured and informal interviews were conducted with industry actors, policy stakeholders, consultants, journalists, researchers and members of the academia, both Chinese and foreigners.

Discussion

Funding for research

Between 2000 and 2015, China's Gross Expenditure on Research and Development (GERD) measured in current PPP \$ has increased annually by approximately 18% (Ministry of Science and Technology various years). China counts for an ever-larger share of the global R&D spending and, since 2008, it has become the second biggest spender nation in the world. In 2014 it has surpassed the EU as a whole and following current trends, China could overtake the US around 2019. China's GERD expenditure relative to GDP, also known as R&D intensity, increased from 0.83 per cent in 2000 to 2.12 per cent in 2016. Although still behind US, Japan, Korea and OECD average, the nation is advancing quickly and has exceeded the EU. The 13th 5-Year Plan (2016-2020) sets an R&D intensity target of 2.5 percent by 2020, indicating that Chinese R&D expenditures will continue to rise.

Looking into the sources of funding, surprising is the fact that governmental direct funding for R&D accounts for just 21.26% of GERD. Actually, the government's contribution is lower than in Korea (23.66%), US (25.50%), EU (31.74%) and Russia (69.52%). Therefore, Business Expenditure for R&D (BERD) in China accounts for 74.73%, second only to that of Japan (77.97%). Data is confirmed by *China S&T Statistics Yearbook*, *OECD Main Science and Technology Indicators* and *UNESCO UIS online databases*.

If we compare R&D spending of Chinese companies to the rest of the world, the *2017 EU Industrial R&D Investment Scoreboard* (European Commission 2017) reveals that out of 2500 top world spenders with over € 24 million each, 376 companies are from China (combined amount \$61.8 bn., 8% of total expenditure), whereas 822 companies are from US (\$290 bn., 39% total expenditure), 567 from EU (\$192,5 bn. 26%), 365 from Japan (\$ 103.8 bn., 14%), and 370 from ROW (\$96.4 bn., 13% total expenditure). The study records a fast growth of cumulated expenditure by Chinese firms included in the top, with 18.8% just in

2016. The growth is the fastest of all countries and is distributed across all industrial sectors considered, as well as across a large population of firms. However, the total nominal sum is still relatively small, given China's economic size.

2017 Global Innovation 1000 Study realised by PwC (2017) shows that amongst 1000 top global R&D spenders, 125 firms are from China, whereas 368 companies are from US, 235 from Europe and 171 from Japan.¹ If we narrow the ranking even further, in between 143 global companies that invest in R&D more than €1 bn., 14 firms are from China, whereas 51 from US, 39 from EU, and 22 from Japan. (PwC, 2017) Ultimately, in top 50 R&D spenders, there is only one Chinese company, Huawei, which occupies position 6. (European Commission, 2017)

Therefore, we can notice that Chinese BERD accounts for an important share of top global R&D spending which is growing rapidly. The global BERD of US and China are comparable, China being expected to exceed the US in the next few years. However, if we analyze firms distribution, we find that the more we narrow the rankings towards top spenders, the more the ratio of Chinese companies decreases. In top 2500 largest R&D spenders, 15% are Chinese companies. In top 1000 the ratio decreases to 12,5%, in top 143 to 10% and in top 50 to as low as 2%. The opposite is valid for United States, which hosts approximately 65% of top 20 R&D spenders.

Therefore R&D funding in China is particularly atomized and evenly distributed over a larger population of companies, especially outside Top 2500. The number of companies involved in R&D activities is relatively large, whereas funding per unit is relatively small. Furthermore, research efforts of Chinese companies in top 2500 are less focused on particular industries and are more evenly distributed across sectors. ICT production is the only dominant industry, accounting for 34% of all research spending. If we exclude Huawei, which accounts alone for 16.8% of all input, then ICT will decrease to 17.2% of all research spending, followed by automobiles and transport with 12.5% and ICT services with 10.1%. All the other industries account for less than 10% of research spending.

Such an atomized structure both across companies and industrial sectors brings more competition and dynamism throughout under-high tech sectors and sustains incremental innovation through improvements in production process, supply chain, business and marketing models. However, Chinese companies are relatively limited in their capacity to engage in expensive basic research with high risks and long-term gains, which is exactly the type that would eventually lead to radical breakthroughs. In other words, there are still no genuine Chinese competitors to innovation giants such as Alphabet and Amazon.

Policies and government

In terms of policies, the trigger for China's take off was the establishment of Special Economic Zones (SEZ) since 1980, areas of experimentation with market-principles and liberalised foreign investment. Some of them, such as Shenzhen, transformed into powerhouses of innovation and economic development, inspiring reforms across the whole nation.

As the market became larger and more attractive, foreign companies sought to receive access to their products. The Chinese government leveraged the opportunity and deployed the policy of "trading market for technology" (TMFT) (Xia and Zhao, 2012). TMFT has been restricting market access on conditions imposed by the government, related to the transfer of technology and production capacity to China. This usually translates into a compulsory joint venture between the foreign company and a domestic counterpart. The most known case is that of the automobile industry.

The government leads investments in those targeted areas and planned technologies that do not make financial sense for market forces, being too risky, expensive and lengthy. Such are

¹ This study does not include Huawei, China's largest spender.

the cases of wind turbines, high-speed rail, aircraft engines, and space-related industry. However, as discussed in the *Funding for Research* chapter, government direct funding for R&D accounts for less than 22% of GERD, while the large majority of funds is provided by the business sector. Nevertheless, private R&D is rather negligibly supported in terms of subsidies or favourable tax policies.

On the other hand, the government aims to remove ideological and institutional obstacles, stimulate cooperation between academia and industry, as well as to ensure a fair platform for competition and an efficient institutional environment (State Council of the People's Republic of China 2015a). Unlike previously, modern S&T strategies strongly emphasize the role of business-led innovation and the aim to commercialize technology. The state aims to stir "mass innovation and entrepreneurship" across a wide population of companies, calling for SMEs to increase their role in R&D (State Council 2015b, 2016).

Inbound and outbound FDI

Favourable policies attracted MNCs to move production in China, open branches and subcontract local companies. Initially, domestic innovation has relied on imitation and the direct import of technology. The pace was very fast, driven by the need to meet MNCs' requirements on cost, performance and quality for the goods manufactured in China (Steiber, 2018).

Domestic companies gradually began to adjust their products and services to the domestic market (Yip and McKern, 2016). Authors label this phase as "frugal innovation", which is to reduce premium features meant for developed markets, cut costs and adapt products for the local consumers (Li, 2017). China was incrementally adding to its technical know-how on the basis of a trial and error learning process, gradually employing best or near best-practice technologies (Yu, Yu, and Pan, 2017).

As the internal market grew and became more attractive, MNCs started not only to produce in China in order to sell abroad, but also to target the Chinese market itself. Domestic companies had to progress and reach higher standards in order to compete with foreign products on their own market. While foreign companies had superior technology, managing skills and a global network of resources, local companies benefited from inside-knowledge of the local markets. Chinese companies managed to move up the value chains through developing designs and technology, marketing capabilities and even attracting talents from MNCs. They made a natural use of the supply chain networks developed in China by MNCs in their global productions system, including high-quality component suppliers and subcontracted manufactures. Therefore, MNCs created both the resourceful industrial ecosystem and the competition pressure needed to drive the take-off of many Chinese successful companies. Such an evolution is maybe most visible in the ICT industry (Steiber, 2018, Li, 2017).

A more recent phenomenon is that of Chinese outbound investments. Investments abroad were first promoted in 2005 with the announcement of the "Go Global" policy. After the launch of the Belt and Road Initiative, the volumes of OFDI sky-rocketed, especially in developed markets. Direct exposure to foreign markets is enhancing Chinese companies' innovation capacity due to increased competition and knowledge transfer. Investing abroad is also a new means to acquire technology, talents and know-how.

According to the public figures released by China's Ministry of Commerce, FDI decreased in 2017 by 29.4% and reached \$120 billion. This is because the government has installed capital controls, being weary about money-laundering and decreasing currency reserves. It has also set specific industry priorities for OFDI, encouraging technology-seeking investments in the detriment of other ventures. Despite recent setbacks, on the medium-term, it is expected that Chinese FDI will resume a tempered growth.

Conclusions

The experience of China shows that there is more than one way to progress. At the same time, one has to bear in mind that due to peculiarities such as political system and demographic conditions, the solutions found by China might only function for China.

Overall, economic reforms, imitation, incremental innovation, heavy R&D spending, large market scale, intense competition and a market-driven economy combined with pragmatic and sometimes strong central policies contributed in different ways to China's innovation landscape. China is still behind in many sectors, such as automotive, aerospace or high-tech industry. However, the tectonic plates are shifting. China's shares of global export markets is constantly increasing, not because manufacture would grow extensively, but because the economy is moving up the value-chain.

The nation is soon to become the largest R&D spender in the world. One of the main arguments of this study is the fact that, counter-intuitively, R&D funding in China is business-led, to an extend even larger than in the EU, US and Korea. On the other hand, government spending is also increasing, but on limited number of priority areas. Research spending is highly atomized and distributed across industrial sectors and population of companies. This reflects strong incremental innovation capacity and balanced technological development, or "mass-entrepreneurship and innovation" as policy-makers describe it. It also reflects the lack of real champions that can venture into costly, basic research, which eventually leads to radical scientific breakthroughs.

Chinese Government is not and does not aim to be the main actor or sponsor of innovation activities or the industry at large. It rather sees itself and acts as a platform and facilitator for a market-driven economy. However, there are times and specific sectors where the government considers necessary to intervene strongly in markets, which not rarely draws criticism from foreign policy and business circles. Its main policies in the field of innovation include: prioritizing certain strategic areas for resource allocation and favorable policies, stimulating the acquisition and import of foreign technology, intervening on markets when needed and sometimes in protectionist ways, reducing the nation's technological dependencies and vulnerabilities, attracting international talents, promoting outbound investments and others.

Learning from foreign companies was a fundamental driver for innovation in China. After the opening-up, foreign companies brought capital, technology and knowledge, re-shaped institutional frameworks and created a new type of industrial ecosystem. Some Chinese companies have accomplished to climb a reverse product cycle by imitation, variety creation and selection, achieving incremental improvements and eventually becoming competitive innovators themselves. Foreign companies also acted as a mobilizing factor of competition for domestic firms. They were both discriminated against and favored by the state in different stages and industries.

Finally, the study analyses recent trends in technology-oriented investments abroad carried by Chinese companies, usually in the form of mergers and acquisitions in developed markets. The main motivations for Chinese companies are entering those markets that are not easily accessible for Chinese brands, as well as acquiring fresh technology and talent. Chinese FDI outflows have increased vigorously in the last decade, but due to stricter regulations both in China and abroad, the last two years saw a relative decline in value and number of deals. The study argues such decline is situational, and the long-term trend of increasing investments will resume, probably at a more tempered pace.

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SUSTAINABLE BUSINESSES ENHANCED THROUGH DIGITAL TRANSFORMATION AND ARTIFICIAL INTELLIGENCE IN THE CONTEXT OF INDUSTRY 4.0

Bianca Ioana Dumitrescu¹ and Alexandru-Ilie Buzatu²

^{1) 2)} The Bucharest University of Economic Studies, Romania

E-mail: bianca.dumitr@gmail.com; E-mail: alexilie.buzatu@gmail.com

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Abstract

The paper analyzes the interplay between Sustainability and Digital Transformation that is happening now in businesses around the world. We look into recent developments and how businesses strive towards sustainability; we investigate how the Digital Transformation process is implemented and what are its outcomes. We outline the Sustainable Development Goals, with focus on the Digital Revolution. We note the recent rise of Artificial Intelligence(AI), and how it enables the achievement of this Digital Revolution but acknowledge that it comes with a cost, sometimes unquantifiable.

These solutions tend to provide only an incremental, cost-saving and temporary advantage, as most companies work to improve the core business. In order to improve results and be more efficient, companies have to approach automation differently, based on systems of analysis and thinking, focus on growth and enforce teams.

Digital transformation is the first step towards operational efficiency and transparency, and repetitive process automation would bring more discipline and efficiency. It is important to find out what systems are appropriate, who wants to implement digital solutions and discuss the challenges involved in transforming the business.

We end the investigation with a set of conclusions, in the context of a holistic, interconnected world, where everybody is responsible to reach sustainability.

Keywords

Digital transformation, Sustainability, Artificial Intelligence, Sustainable Business, Change Management

JEL Classification

F44, M16, M21, O14, O31, Q01

Introduction

In the past decade Digital Transformation has become one of the key elements for businesses all over the world, this concept being embraced from the smallest companies to the most renowned multinationals. We refer to digital transformation as the integration of digital technology into all areas of a business, fundamentally changing how it operates and delivers value to customers (Grab et al., 2019).

The goal of keeping digital transformation impact on society positively motivates research in many areas, from economics and law to technical topics such as verification, validity, security and control. As digital technologies start to reshape industry after industry, companies are making efforts to keep up and benefit from these trends while also staying competitive.

According to a survey done by the McKinsey Company (Fig. no. 1) regarding digital transformation, more than 80% of the people interviewed stated that their companies have made considerable efforts in this direction in the past five years.

However, the success of these transformations has proven to be elusive. For example, previous research by McKinsey Company showed that less than a third of the companies who implemented digital transformation actually succeeded in improving performance and were able to maintain these improvements. Furthermore, their recent results proved that the success rate of digital transformation is even lower. Success rates vary depending on the company size: a small organization with less than 100 employees is more likely to report a successful digital transformation (2.7 times more) than an organization with more than 50.000 employees (McKinsey & Company, 2018).

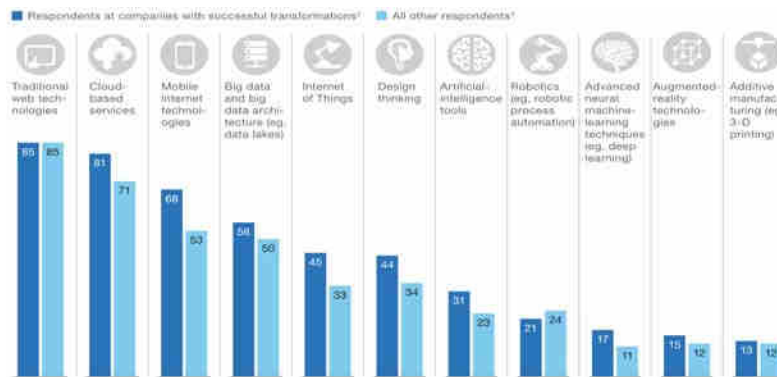


Fig. no. 1. Digital technologies, tools and methods currently used by organizations

Source: McKinsey, 2018. <https://www.mckinsey.com/business-functions/organization/our-insights/unlocking-success-in-digital-transformations>

Even though digital transformation is at times difficult to achieve, in the last 10 years it has become one of the key pillars for businesses all over the world, being embraced from the smallest companies to largest multinationals (Marquardt et al., 2018). We often hear about the association between technology, transformation and artificial intelligence. Are they effective, can they help to obtain a sustainable and harmonious, long-lasting business?

Research Methodology and Paper Organization

The paper is based on qualitative research that supports an in-depth understanding of the situation investigated and the use of Artificial Intelligence in developing sustainable businesses. AI is at the forefront of today's interest in companies. The researchers' analysis is based on literature review, empirical data is collected via self-inspection and reflection of own experience, and on specialized consulting companies that promote new business sustainable development tools. Figures are given using very recent reports (2017-2019) by

large consulting companies (PWC, McKinsey) or governmental or independent agencies (European Environmental Agency, Center for Climate and Energy Solutions, etc). General guiding principles come from peer-reviewed publications (2015+). The main sustainability goals (including the Digital Revolution which is our focus) are discussed based on the reference work provided by The World in 2050 (TWI2050, 2019), a global research initiative supporting the United Nations' 2030 Agenda.

This paper defines and researches the concepts of Artificial Intelligence and Sustainability, in the context of Digital Revolution and the enablement of sustainable business development. We are focusing on the economic/sustainability cause-effect, but other aspects are briefly reviewed as well (e.g. environmental and societal issues). As the main investigation point is the effect of AI in Digital Transformation and Sustainability, both these aspects are discussed separately before analyzing them jointly. Finally, the authors draw a number of conclusions based on the investigation.

Digital Transformation through Artificial Intelligence

Digital Transformation refers to the strategy adoption of digital technologies with the final purpose of improving processes and productivity, delivering better customer and employee experience, managing business risk and controlling costs. The first phase of Digital Technology journey started around the mid 20th century and lasted until the 1990's. The second phase started with the advent of the Internet Age. Today, it encompasses a variety of solutions, tools and processes that can be tailored for each company according to its needs.

Why is digital transformation important? To remain competitive on a global marketplace which changes continuously, you have to adapt and embrace new technologies in your business. IDC estimates that worldwide spending on technologies and services that enable digital transformation will reach almost \$2 trillion in 2022 (IDC, 2018).

In a report published by PWC in 2018, 80 ways were identified in which Artificial Intelligence, the latest tool in the digital transformation toolbox - can help the environment. Some of the exciting areas include energy system load prediction and distribution, smart mass transport, predictive urban planning, "hyperlocal" weather forecasting for crop management, supply chain monitoring and transparency, just to name a few (PWC, 2018).

Looking back, the first notable steps towards artificial intelligence were taken in the 1940's. Today, AI has become ubiquitous in our lives, quietly helping us in our daily routine. As Celine Herweijer (Partner, PwC UK Innovation and Sustainability Leader) and Dominic Waughray (Head of Public-Private Partnership and Member of the Executive Committee World Economic Forum) affirm in their paper (Fourth Industrial Revolution for the Earth, Harnessing Artificial Intelligence for the Earth), AI has moved from research labs (in vitro) into our everyday lives (in vivo) due to six converging factors: Big Data, Processing power, A connected globe, Open-source software and data, Improved algorithms and Accelerating returns. These preconditions were met each in its own time; this is why AI, while an old concept, is only now exploding in every field around us. For example, our phone has smart GPS navigation, AI-powered photo corrections, or tailored music and movie recommendations. One effect of this is that even non-technical executives are accustomed to it and are thus aware of its potential value (PWC, 2018).

This means that now we have networks that can automatically read house numbers in pictures, understand handwriting and drive a car on a road. Show a network examples on how to segment and parse text and it will be able to help you with grammar (Boros et al., 2018). Or, show a network the second-by-second energy demand of a country and it will be able to predict with high accuracy what demand will be in each city in the following hour, day, or even month. This is achievable now; other things, like predicting the weather, will get better as time goes by, as more data is collected and as algorithms improve.

The truly enabling power of AI is the predictive power, and this is what is the true game-changer for industry and companies in general. Before AI, companies relied on crude predictive statistical algorithms, or, in the vast majority cases, on no algorithms at all. We were reactive. In the AI-age we have access to unprecedented predictive powers – this allows us to be proactive – a game-changer moment, unique in history.

However, we're only in the early days of this age. In 2019, PWC conducted a different survey amongst global executives that showed that 54% of them were making significant investments in AI (PWC, 2019). Another analysis made by Tractica, indicates that annual revenue generated from implementations of AI software will increase from 1.4 billion in 2016 to 59.8 billion by 2025. This means that organisations that continue to invest in tools, data optimization and AI-enabled innovations have their income expected to grow. But, investments and innovations are meant to keep a business viable. A viable business is sustainable.

Sustainability trends

In the last two decades the importance of sustainability defined as a business issue has grown significantly. More and more businesses have begun to understand that their success is based on three core elements and each of them must be carefully considered in relation to the others: Environmental Protection, Social Development and Economic Development.

Since sustainability problems have become significant for a business to succeed, companies are realizing that they can't „walk” alone. So it is up to each organization to address the main sustainability issues through their strategic networks. When it comes to sustainability there is no “one right solution” and the best options depend on each company's stakes and objectives. Prof. Knut Haanaes proposes eight actions for all management teams to improve sustainability practices (Haanaes, 2016). He affirms that by respecting transparency, aligning strategy and sustainability, putting compliance first then competitive advantage, being reactive to proactive, paying attention to quantity, including business case, engage the board and your ecosystem and finally - and most importantly – engaging the organization broadly, companies will be able to succeed in this major challenge called sustainability.

The good news is that lately more and more companies are beginning to adopt the idea of sustainable practices including environmental factors, worldwide, across all industries. 62% of executives consider a sustainability strategy necessary to be competitive today, while another 22% think it will be in the future (Haanaes, 2016). Given most companies' disclosures, they seem geared towards AI and the opportunities it enables. Interestingly, the vast majority does not mention any AI risk at all in their Companies Sustainability Reports.

For example, bias is a sustainability risk. Bias happens when the machine learns patterns that are based on age, race, gender: credit scoring in banks uses different levels of AI routinely to determine credit risk. Biased algorithms could lead to unfairness towards specific groups, an action that is prohibited by law and is punishable. To prevent this, companies must ensure unbiased data as well as unbiased algorithms. Furthermore, as sustainability reporting increases or even becomes mandatory, companies should be encouraged to report these extra aspects, like algorithmic fairness, third-party certifications of usage of unbiased algorithms, as well to specify what software they use and quantify energy expenditures based on it.

Taking a step back and looking at the four pillars of sustainability: Social, Human, Economic and Environmental, it is a known fact that AI will contribute significantly to the Economic pillar through improved production, maintenance and prediction (Sachs, 2015). The Environmental pillar will also benefit in mid-to-long term from AI, as prediction power and interconnected smart devices will bring a significant change in how we produce and distribute energy, on how we move, on how we treat the agricultural soil or on how we monitor and clean our water supply. Short term, the increased power consumption and unclear or non-existing policies will minimize the gains brought by AI. The Human pillar will benefit from

AI in the form of improved, tailored life-long learning (education, re-skilling) and better healthcare through personalized diagnostics or AI-enabled drugs and treatments breakthroughs. The Social pillar is not so direct; the maintaining and improving of social quality by cohesion, reciprocity, honesty could be seen as being improved by online social networks, but care must be taken as it will exact a toll on direct relationships and change the way a society feels and interacts.

Returning to the direct sustainability effects of AI, the biggest concern is that given the guaranteed production increases, this extra wealth would be distributed evenly. Unfortunately history has shown that the vast majority of businesses/governments act in direct economic self-interest: without a mindset change we shouldn't expect an AI-powered organization to give up proprietary knowledge or to invest the majority of profits into society or environment. However, there is hope. Big companies are open-sourcing (some) algorithms, NGOs are pushing towards AI transparency, accountability and fairness, all the while investors, through ESG analysis, and social pressure, through environmental and social awareness, are pushing economic entities to change this mindset and incorporate sustainability as one of their goals.

The Digital Transformation and Sustainability interplay

We often hear about Sustainable Development Goals (SDG) and the impact they would have on society. When we refer to SDGs we are actually talking about six fundamental transformation ideas known as the major drivers of the future changes: Human Capacity & Demography; Consumption & Production; Decarbonization & Energy; Food, Biosphere & Water; Smart Cities; and the Digital Revolution. These are the directions identified by the TWI2050 as distinct operational areas that, if reached, would transform our society into a sustainable one, that would serve and empower both its people and the environment (TWI2050, 2019). Crucially, the path forward depends as much on policies and our will to enact them, as on the *science* that will enable true (both digital and non-digital) transformations.

Thus, digital transformation has an added goal: improve my business while, at the same time, make it more sustainable. Looking at the sixth Sustainable Development Goal, the Digital Revolution, this interplay of transformation and sustainability is clearly defined in its scope: „Science, technology and innovations are powerful drivers, but the direction of change needs to support sustainable development” (TWI2050, 2019). This Revolution embodies all the newest state-of-the-art technologies that bring true change in the world. The digital transformation however is not a holy grail that needs to be adopted at all cost; its development has to be planned, to balance out the needs of the business, employees and environment. As a quick example, supercomputer centers need a large amount of power which today comes from fossil fuels. Furthermore, making the center „smart” by implementing the latest technologies in the digital transformation toolbox (automatization, robots, predictive maintenance, etc.) will have a direct impact on the number and qualifications of the center's employees. Do we accept that there will be fewer employees? Where is the threshold between CO₂ emissions and raw processing power, and, if so, who decides it?

In what follows we look into each of the top 3 sustainability problems today and analyze it from a digital transformation / AI point of view, highlighting sustainability goals.

Table no. 1 Top sustainability problems in terms of GHG emissions

<i>Energy</i>	Energy production (of all kinds) represents 72% of all emissions. At a global level, this energy is mainly used for direct electricity and heat (31%), agriculture (11%), transportation (15%), forestry (6%) and manufacturing (12%) (Center for Climate and Energy Solutions, 2017). Considering that ~68% of the electricity produced

	comes from fossil fuels, looking into how we could decarbonize this industry is essential.
<i>Transport</i>	In 2017, 27 % of total EU-28 greenhouse gas (GHG) emissions came from the transport sector, and the EU is considered as one of the most pro-environment geopolitical entities. Current emissions need to fall by ~60% by 2050 to meet the long-term 60 % GHG reduction target as set in the 2011 Transport White Paper (European Environment Agency, 2019).
<i>Industry</i>	Industry consumes energy to convert raw materials into goods (cars, clothes, steel, etc.). For example, 22% of US's GHG emissions are caused by industry (IPPC, 2014).

Source: *The Digital Revolution and Sustainable Development: Opportunities and Challenges*.
International Institute for Applied Systems Analysis (TWI2050, 2019)

Energy → Decarbonized, streamlined energy: Decarbonizing the energy system is one of the main goals towards the SDSs. Though alternative sources like nuclear and solar are on the rise, they are not enough to offset the increased demand brought by the Digital Revolution, and thus GHG emissions are constantly increasing. A concerted move towards the transformation of the energy sector has to happen, and has to target both the energy source (replace fossil fuels with non-polluting alternatives), as well as the redesign of the energy field. As smaller plants appear (geothermal, hydro, down to home solar panels), the standard producer-consumer paradigm has to disappear as the roles become interchangeable. Powered by AI, the digital transformation of the energy becomes achievable: the reduction of operation and maintenance costs, improved power plant efficiency, reduced blackouts, smart demand-response of the power grid that proactively configures itself in real time. The streamlining of the energy sector is central; transport, industry as well as every other field are dependent on it – thus, digital transformation has to happen here first, guided by sustainability principles.

Transport → Smart transport: A real revolution is on the horizon in transport. As vehicles become electrified, as well as interconnected, as they start to be able to drive themselves thanks to increasingly better AI computer-vision algorithms, they become controllable elements that a digital transformation can control and optimize. For example, a smart city will have a smart mass-transport system, that will adapt in real-time to passenger demand, with driverless trams, metros and buses. AI is at the core of this control system. Such a change will bring with it less emissions due to not only electrified vehicles, but less vehicles needed to move the same amount of people and goods. Looking further, at shareable self-driving cars (another answer to the overcrowding of our streets), we see that AI is essential, but not sufficient: people need to approve of the shift from self-ownership to shared-ownership, and this has to be guided by policy as well.

Industry → Sustainable Industry 4.0: Industry will see a major revolution as well. The digital transformation has brought many changes so far, but the biggest one will be the full integration of AI (Kiehne and Olaru, 2017). For example, most waste is generated by the supply chain. Interlinking all actors in a single framework will lead to less overproduction waste as producers would produce only what will be needed by consumers with the help of AI-powered predictive algorithms. Transporting these goods optimally would be done by AI-generated routes that would maximize load while also having the direct benefit of reducing GHG emissions (as an example, in EU it is estimated that truck load usage is 60%, and every third shipping container sails empty) (Intermodal & Logistics, 2019). Transparency in the produce-consumer chain will increase accountability and thus promote sustainable practices. Machine learning predictive algorithms would be used in all areas to increase production, cut waste, and assist in overall management and operations.

As AI is a revolutionizing force, we have to ask if, sustainable-wise, are there any downsides. These ever-more-powerful algorithms require energy (Vinuesa et al., 2020). The devices they run on become common-place and they too require energy to operate 24/7. Data Centers and networks are estimated, currently, to consume about 2% of produced energy (Grubler, et al., 2018). At present, energy efficiency improvements on devices could keep the demand stable. AI-wise, however, the situation is getting worse, at least for the short term. For example, training a current state-of-the-art Natural Language Processing model emits 87 Kg CO₂, and running a single instance for a month will emit much more (UKEssays, 2020). For example, Google's search, which is used millions of times a day, is partly based on such models. As this problem is very new, only recently has AI sustainability come into focus, with attempts at creating more energy-efficient models. Overall, because AI is so novel and under constant evolution, its full impact on the SDGs is difficult to quantify and reliably predict.

Conclusions

We have presented the Digital Transformation concept with focus on AI, and its interplay with sustainability. As we are currently experiencing the beginning of the Digital Revolution, we need to be aware that it is happening, and guide it such that it will enable, among other, our sustainability goals.

Based on the analysis presented in this paper, we recommend the following high level action items for participating entities.

For *governments*, it is essential that they streamline their decision taking process regarding targeted policies and regulations; they should provide open data; sustainability should be taken into consideration more when deciding large-scale policies. *Companies* need to integrate environmental awareness into their strategy jointly with their digital transformation and AI goals; prepare employee retraining programs to account for AI integration. *Academia and AI developers* should refocus and look at a bigger, multi-disciplinary picture; provide transparent access to data and algorithms; focus on practical applications of AI together with industry partners.

We draw the following conclusions, that executives should take into account when designing their digital transformation agenda:

- Digital Transformation is a process that will happen naturally in businesses. While difficult, this process will happen, either *proactively*, directly pushed by CxOs, or *reactively* by indirect pressure from competition and ESG-aware investors.
- Digital Transformation is *not guaranteed to succeed*. It is a difficult and constant process of change that must be handled carefully, as past history has shown.
- It is up to leaders to enact policies (both governmental and in-company) such that Digital Transformation will make a *sustainable* change.
- AI, the newest tool in the Digital Transformation toolbox, will be *disruptive*. It provides the means to achieve the Digital Revolution.
- Like any revolution, *AI comes with a cost*. Besides the direct energy costs that can be measured and contained, the changes in society will have an ethical cost, and people will have to adapt.
- Transformation towards a sustainable future is possible, but *action is required* from all stakeholders. Because everything is integrated in the connected world, the grand transformation requires a holistic perspective (TWI2050, 2019).

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LEADERSHIP CHANGES IN ORGANIZATIONS DURING CRISIS SARS-CoV-2 2020 CASE

Andrei Cepoi¹, Adrian Istrate Scrădeanu² and Cristinel Vasiliu³

¹⁾²⁾³⁾ The Bucharest University of Economic Studies, Romania

E-mail: idandrei@gmail.com; E-mail: istrade@europe.com;

E-mail: cristi_vasiliu@yahoo.com

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Abstract

The main purpose of the paper is to have a thorough analysis on the development and effects of SARS-CoV-2. From both a business environment perspective as well as from within different organizations, in the context of existing and new leadership behavior, values and competences.

We will test different premises about leadership driven decisions, human behavior changes during crisis situations and do an exercise of discovery of different correlations between actions and effects during high stressful and extreme isolation situations.

We will go through a timeline of adaptive leadership changes in approach before and during the SARS-CoV-2 crisis.

Finally, based on the information gathered and the insights generated, the authors will also make a projection of possible leadership directions after the crisis has ended.

Keywords

Leadership, Competences, Team, Personal Development, Crisis Management, SARS-CoV-2

JEL Classification

M1, M10, M19

Introduction

Many articles and books have been written along the time on the topics of leadership types, leadership values and competences; during recent years many concepts have been updated and views have been changed in relation to how economy and trends evolve and how different generations traits impact leadership best practices.

A deep dive into the current SARS-CoV-2 outbreak will give us a sense of how human behavior changes during periods of stress and human connection deprivation.

As there has been numerous studies indicating that we as humans cannot easily make a separation between work life and personal life, to the extent of impossibility as described by

Jarrett (2014), then it becomes clearer that managers and leaders need to facture in new perimeters into the management style and behavior, so that employees can continue to be operating at their fullest potential from their own homes.

Working from remote locations or working from home, has been tested and integrated in the normal schedule of many modern companies especially for the jobs and activities where to deliver value, the only necessary tools they need is a personal computer and connection to internet.

The authors will try to assess, how much does human connection weights in the performance output and what is the cost of maintaining that productive level; also, what are the main development changes in both employees and leadership style as we move around the different stages of the crises.

The setup before the SARS-CoV-2 Crisis

Let us start by looking into what were the effects of SARS-CoV-2 pandemic from a business environment perspective and inside company perspective and what were the different leadership approaches even before the outbreak.

Since 2008 Economic Crisis, we can see that the economy has continued to grow according to the European Commission Report (European Economic Forecast, 2019): unemployment in the EU, US and other countries were at a long time low and also boosting households purchasing power, positive growth outlooks on emerging markets, stock markets and equity indices in advanced economies have been hitting record highs.

Also, since 2008, there have been more than 400 unicorns (companies valued over 1 billion \$) out of which over 60% of them are of Chinese or US origin origin as published recently by the CB Insights report (The Global Unicorn Club, 2020) so we can see a concentration of wealth especially connected with technology innovation.

In these trends of growth and prosperity we could see different movements and green agendas such as sustainability, environment care, climate change awareness which can be considered higher desired values and needs that can be achieved once other basic and psychological needs are met according to Maslow's Hierarchy Pyramid if we consider a collective employee and leadership conscience.

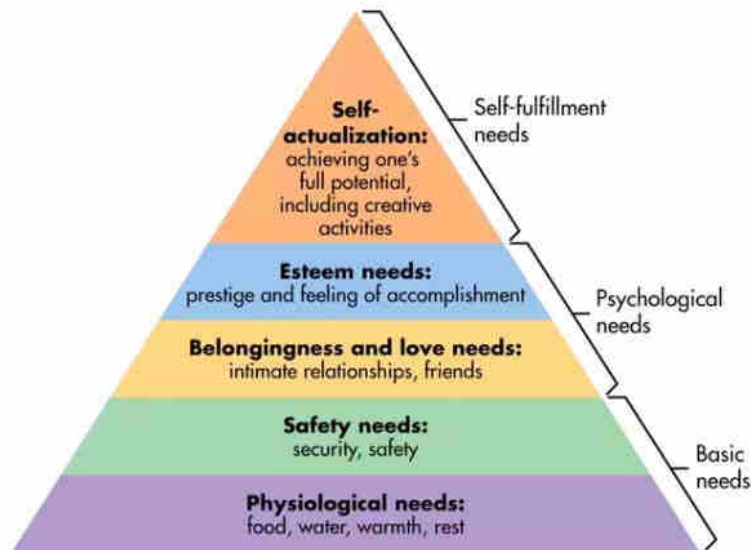


Fig. no. 1 Maslow's Hierarchy Pyramid

Source: <https://www.simplypsychology.org/maslow.html>

The increasing fast development of business environment, which resulted in both emerging technologies and applying tech to traditional businesses, has also had the effect to underline the value and focus of business models and leadership styles connected to agile organizations and agile mindsets, as we can also see from the Gartner research (van der Meulen, 2018).

One of the main logics behind it is that it doesn't matter if you had the best product too late, it matters more to have a good enough product first, capture the market early and continue to develop and improve that product iteratively.

As a result of this new logic and trend, the mindset, behavior and competences of businesses and employees had to adapt and transform accord to the new mindset and ways of working thus the leadership style, values and competences had to be improved along with them.

There are numerous researches such as from the McKinsey&Company Leading agile transformation report (de Smet, Kurie and St George, 2018) that offer different views on modern agile organization and we can connect the following leadership competences, values and behaviors:

- **Creativity** – encouraging team members to explore and think differently by challenging status quo and resulting into innovation and disruptive technologies
- **Empathy** – seeing through the eyes of the company's customers
- **Taking fast decisions** – speed of decision and execution with good enough information at hand, put it to the test and use as a learning for future decisions and experiments
- **Encourage collaboration and partnership** – focus on team performance and collective ownership above individual expertise and experts seeking, both within the team and outside of it
- **Stewardship** – rather than being the person who tells people what they need to do, the leader is empowering them to take own decisions and take ownership and guide along the way

The setup during the SARS-CoV-2 Crisis

Ever since the first report of SARS-CoV-2infection in December 2019 to the exponential growth and closure of Wuhan, the quick spread into Europe in countries such as Italy and Spain, and finally becoming a truly worldwide pandemic, we have been witness to heavy businesses losses, industries, raise of unemployment and huge market volatility.

It seems that a good indication on whether industries and companies can be better prepared during a highly infectious global pandemic, is the ability to carry on the day to day activities independently from their work premises. A recent report from USA Today (Suneson, 2020) describes the effects of the SARS-CoV-2 on the economy, industries and companies.

Many global companies have integrated work from policies in their standard employee offer for many years now especially where the activity and results could be delivered online through means of computer and internet. On the other side there are a lot of industries where most of the value producing workforce needs to be outside the office such as agriculture, heavy industries, different transportation industries and other similar services. On top of that, because of how easy the viruses spreads, one safe measure to protect people was to keep distance from crowds and limit travel ; this in turn had another wave of negative impact on business sectors such as events and entertainment (conferences, awards, music festivals, sports, movie theaters), tourism (hotels, cruises), auto market, retail, restaurants, wellness facilities and other services.

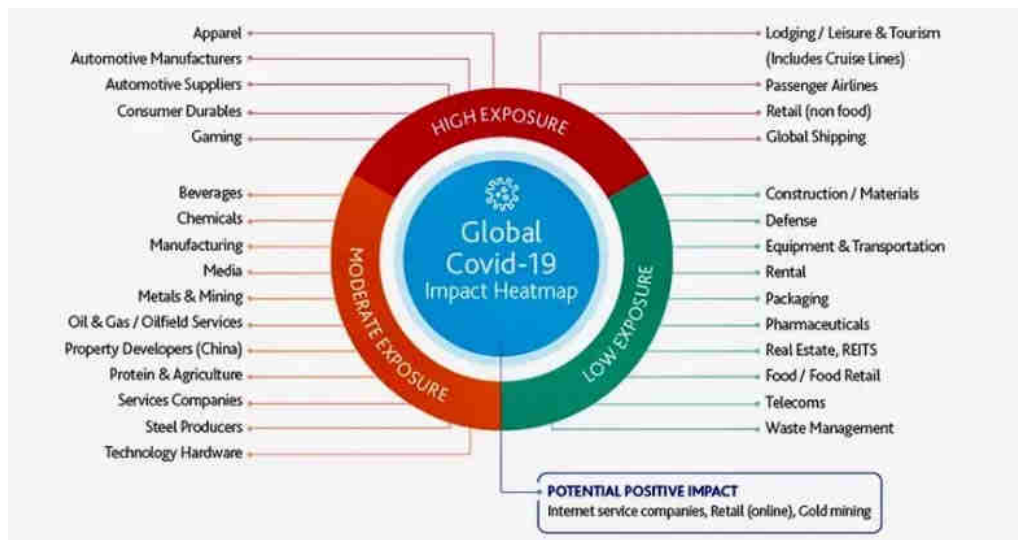


Fig. no. 2 Heat map shows industries hit hardest and least by the SARS-CoV-2 crisis - Moody's Investors Service

Source: <https://www.businessinsider.com/coronavirus-recession-industries-hit-chart-2020-3?r=US&IR=T>

As a result of the heavy uncertainty and fear over losing jobs and getting infected by the virus, employees process information and as such, different leadership behaviors and competences are needed when leading in times of stress and anxiety.

A recent article by Bain & Company assesses the leadership needs to be adapted to current crisis (Slagt, Michels and Burke, 2020): during high stress times, the ability to process information is reduced by 80% on average and attention spans to maximum 12 minutes, as a result when communication is being done throughout the organization by the leaders, it's necessary to be short and crisp and to be enhanced by additional visual aids, metaphors and compensate the lack of face to face interaction with being more enthusiastic and expressive on the camera.

As the possibility of making new unpopular business decisions for the organization to survive, such as unpaid leaves, salary drops or laying of employees, then it becomes extremely important how these decisions are communicated and justified as well as who does it.

These decisions are always hard to swallow, so the business leader who delivers it, needs to have a good level of trust and a perceived steering wisdom among the employees. As studies have shown (Heathfield, 2019), trust is being built by having an open and transparent communication and by demonstrating emphatic and compassionate understanding of the employees.

When it comes to different business working structure and principles, companies that have been incorporating agile principles and ways of working in their activity had an advantage over traditional-run businesses, as they have been accustomed to pivoting their operations and efforts and having the changing customer needs as their guiding star (Ferry, 2020). As a result, we could see companies changing their business and production focus.

As the ways of working have been changed from sometimes working from own premise (or never never working remotely) towards what is in most cases, full time working from home, we can see then, how leaders need to focus on slightly different competences while being guided by values and principles:

• **Coached Creativity** - evolving from mere creativity and fast decisions exercises where every idea generated was a potential good idea to try out, the role of the leader has evolved more towards guiding the employees with questions that can help generate possible solutions in the current context of challenges and opportunities. While before the outbreak everything was possible, we find now that there are constraints that employees need to be aware of such as budget constraints, product and demand changes and the liberty of thinking needs to be so adjusted.

• **Virtual Communicator** – as we discover from the classic book *Silent Messages* (Mehrabian, 1971), we have 55% of communication done through the body language while only 37% by voice and tone and merely 7% spoken words; it's becoming increasingly difficult to communicate when there is no video camera share in video calls or even worse, when we're using only emails or instant chats. In order to counter that, leaders need to integrate remote communication tactics such as voice modulation, hand gestures and face expression, while also regularly enquiring and making sure the message has been understood. When sending out email communications, they should be short and crisp to avoid confusion and alignment check-ins should be more frequent.

• **Focus on human connection needs** – evolving from empathy, collaboration and inclusion we can see that because human direct interaction is now limited and there is no longer a physical workplace, challenges such as organizing the day between private and personal time, sign-offs, breaks, 24/7 childcare responsibility and so on, are things the employees need to navigate through in the new order. As a result, leaders need to increase their human and personal interactions with their employees even more at the expense of business discussions. Only when people have a stable relationship with themselves, they can operate and even surpass previous work output conditions seen before the crisis.

• **Stricter Guidelines** – as we have already witnessed, human behaviour alters in period of crisis and uncertainty in order for employees not to feel alienated and hopeless, leaders should help them by providing templates and guidelines on how to better operate and navigate with as much negative impact as possible on the operations during remote work.

• **Emerging leaders** – in times of normal business environments and prosperity, the tendency is to have leadership positions covered by people who have very good management skills, are organized and efficient with the drive to constantly improve an existing solution or service. In times of crisis and change, the whole organization, its activities, solutions and services can be extremely affected; as a result, we will see a different type of leaders emerging and thriving in these times, most likely employees without the official "leadership position" and so, existing leaders should pay close attention to when that happens to listen to and promote them.

The scenario post SARS-CoV-2 Crisis

At the present day in April 2020, we are still in the peak of SARS-CoV-2 outbreak. While the total number of cases is rising, the day to day new cases worldwide growth has flattened in certain days of April even slightly decreasing in comparison with previous days.

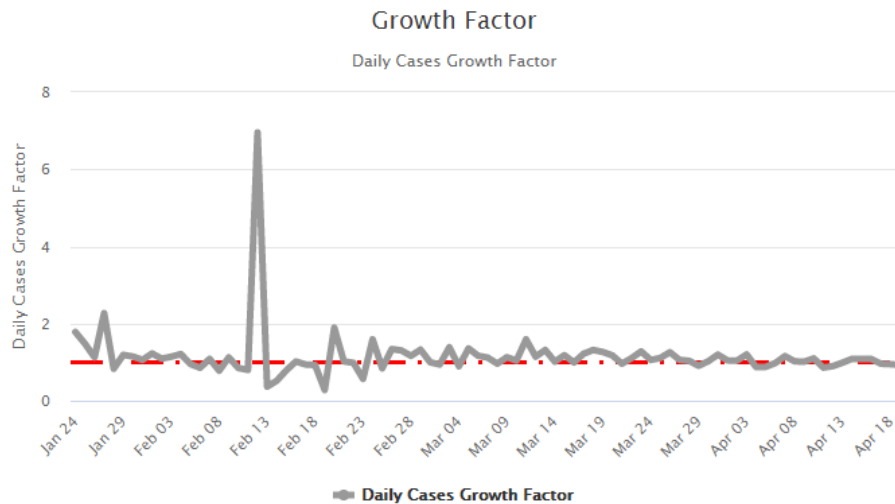


Fig. no. 3 Growth Factor of Daily New Cases - Worldometer

Source: <https://www.worldometers.info/coronavirus/coronavirus-cases>

While most countries are still on lockdown effect and many businesses continue to be closed, we will most likely see the economical and psychological effects in the second half of 2020 even continuing to 2021.

The level of uncertainty is still high, and the ripples of the pandemic are still to be revealed, however there are already signs of some possible future changes:

- If the working remotely exercise has no major impact on operations, then by continuing to work in this manner, even after restrictions are lifted, means that it could potentially save a lot of costs that was otherwise spent on office leases and facility expenditure;
- Business supply chains have also taken a huge toll following China's situation, as a result many companies might be looking for alternative channels preferably in the same country of where the business headquarter is established;
- There will be a high level of people who will lose their job and need to reapply, therefore upskilling and reskilling becomes even more urgent, in order to have a chance to get back in the business environment;
- As businesses will die to lack of activity and cash flow as well as employees that no longer have a job cannot contribute to the budget of the country, this in turn will add additional burden for government pensions and unemployment payouts.

As we will continue to plunge in what could be an entirely different business environment where some companies will disappear, other will pivot and finally some will emerge and thrive, the same thing will happen to the leaders that are now navigating through the SARS-CoV-2 crisis.

In the author's view, the following competences, values and behaviors will be highly valuable for leaders as they move away from today's crisis challenges towards tomorrow's uncertainty:

• **Competence enabler** – whether the changes will happen inside companies or at entire industry level, it is becoming clearer that changes are inevitable to survive and thrive through the crisis. As a result, leaders will need to be quick on their feet and adjust the development needs of their organization and employees by upskilling and reskilling especially associated with limited real-life human interaction.

• **Humanness and mindfulness** – as humans are generally regarded as “social animals”, the negative effects of social distancing can lead to disconnect with the team and the company, anxiety, burnout and even worse depression. In order for this to be avoided as much as

possible, leaders will need to develop a collection of human care awareness skills to the extent of therapeutically conversations, where they can come with practical mindful discussion and practices that will help their employees to stay at ease and composed.

- **Tech Savvy** – another important focus of the leaders emerging of the crisis is that they will need to be a lot more literate when it comes to technology and how to integrate it in day to day activities or strategic directions. Skills related to artificial intelligence, big data and cloud are becoming the norm and will be an even greater role to take us out of the crisis as well as were we'll go from there once that happens.

- **Talent seekers** – as we will come out from the unemployment disaster, leaders will have a great chance to attract and retain high potential employees from both the organization and especially outside it. The pool of people looking for jobs will be the best time to rebuild and strengthen a leader's dream team.

Conclusions

The year 2020 has begun with a major negative disruptive crisis as a result of the SARS-CoV-2 outbreak.

This had already produced major effects on the global economy, traditional business environment, changes in employee's day to day operations, as well as changes to leadership styles, competences and values.

The authors have tried to analyses a complex development of events and their effects, before and during the crisis as well as how different companies and their leaders changed in order to cope with the new world order.

The projections and outlook of how world economy, businesses and leaders will emerge after the crisis ends, are still clouded in a fog of uncertainly and such the authors have proposed a few examples of transformational leadership directions that will have a higher change of success once it is over.

On the other hand, it should be clear that major changes are still expected to happen, as we are still what seems to be the peak of the crisis. so the authors recommendations are subject to further documentation and analysis as new data will emerge and be made available.

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ECO-FRIENDLY PEST CONTROL ALTERNATIVES TO SYNTHETIC/CHEMICAL PESTICIDES

Alina Stancu¹, Nicolae Suvorov², Lăcrămioara Dracea³ and Daniela Măracine⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: stancu.alina.madalina@gmail.com; E-mail: suvorov.nicolae@gmail.com

E-mail: lacramioarav48@gmail.com; E-mail: maracine.daniela@gmail.com

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Abstract

Public health has always been a widely debated issue, especially when it comes to nutrition, which in the last decade tends to evolve towards the consumption of nutritionally high quality products often raised in protected environments with attractive labels where the chemical residues from the use of plant protection products in the agricultural production phase are not always inscribed. Thus, in recent years the population begins to consume increasing quantities of organic products, which most often use eco-friendly alternative solutions to chemical pesticides that pollute the soil, feed animals and the finished product. These alternatives not only promise to improve the quality of food, but also to reduce environmental problems related to greenhouse gas emissions or pollution. The present work is carried out along a comparison between the agriculture of the past and the one of the future and wants to determine ways and possibilities of replacing synthetic chemicals with eco-friendly alternatives.

Keywords

Eco-friendly, pest control, PPP, pesticide, organic agriculture

JEL Classification

Q10, I1, Q50, L66

Introduction

As the main branch of the national economy, agriculture plays a significant role in providing food, raw material for the processing industry, representing a sector on which the natural, technical and social economies depend. The importance of the sector is emphasized by the fact that the problems of the world economy cannot be solved if agriculture is excluded. Environmental protection factors influence the degree of generation of a branch of material products. Climate can influence the structuring of crops as well as the spread of products in the context of the chemical composition of moisture, light and soil, so that each sector of

agriculture depends and is a direct condition of these factors of natural care that determines growing conditions and makes possible the addition of a particular species of plant or animal depending on the area and its characteristics. The modern society, from industrialization to the presentation of the use of technical processes and of the visualization of agriculture as the main branch of economic sector, depends directly on the degree of mechanization, on chemical substances used in agriculture as inputs on the purpose of protecting plants and potentially organoleptic characteristics of final products. Even though agriculture is the main source of food and environmental protection and has a special role to play in the sustainable growth of the economy, it is strongly influenced by changes in the economy, crises and various changes in agriculture modified over time. Thus, agriculture undergoes major changes that affect food security. This crisis generates decentralization of the agri-food sector, the privatization of the land and the lack of some programs designed to create new agri-food chains. The problem of agricultural exploitation, a global feature of the situation in order to increase the state's static concerns to the world for finding foreign exchange and bilateral cooperation, some modalities and ways of intensifying the multilateral cooperation, establishing some collaborations. One of its main ways is the organic farming sector is alternative organic care, to protect crops and provide them with fewer chemicals as happens in conventional agriculture, thus helping to improve the quality of life worldwide and protect the environment.

Organic farming involves the responsible use of inputs, reducing this number as much as possible, and prohibiting artificially synthesized chemicals such as fertilizers and pesticides but also the use of genetically modified material or the administration of antibiotics and hormones in the zootechnical sector. Currently, conventional agriculture requires a large contribution of plant protection products that increase their resistance to external factors, and that can correct structural problems in farm management such as insufficient crop rotation, sensitive varieties, and high nitrogen intake that can be associated with a complex environmental, agronomic and ecological problems. In response to these problems, the European Union is bringing a new vision to the integrated systems of agriculture that have been developed around a coherent approach, along with other concepts such as organic farming. The last decade has been marked by the integration of seemingly conflicting objectives that, developed in farms throughout Europe, have delimited the elaboration of a concentration action that involves the improvement of these conflicts between environment, agronomy, and economy (Vereijken and Royle, 1989; Vereijken, 1990), actions that it also implies increasing the degree of cooperation especially in the last five years. (Vereijken 1995, 1997). The design of multifunctional crop rotation and efficient nutrient management strategies followed by the economic foundation of some projects that take into account the responsible cultivation of the soil and the development of the ecological infrastructure in the farms are the main methods oriented to support the high-quality production, with a minimum contribution of resources. In the last 20 years, the organic farming sector has registered one of the biggest increases being considered an economically viable alternative to traditional production practices.

Comparative study between conventional and organic farming

Without a doubt, agriculture is one of the greatest discoveries of the human race, and it has allowed for 10,000 years now that different communities can live in one area and produce enough food to meet primary needs even for a growing population. Over time, farmers have found effective solutions for plant protection, increasing their resistance to various diseases and pests, but also to the environmental conditions that are not always conducive to crop development and the production of average crops to cover the demand for food. Whether it is agriculture or animal husbandry, the human footprint on agriculture leaves traces even today and with technological innovations and a deeper understanding of the functioning of

ecosystems and even plant biology, studies have begun to show that products from conventional agriculture in which chemicals are used contain residues of substances used to protect plants and animals that produce negative effects on the human body once ingested. The detailed analysis of chemical risks on food safety, but also of biological risks concluded the need to use methods that protect plants from diseases and pests or must improve their quality, but without being harmful to human consumption and the environment. Thus, all methods used in conventional agriculture had to be replaced by eco-friendly alternatives which, on the one hand, minimize the risk of chemical residues occurring in the final product and are safe for consumption and, on the other hand, protect crops from all external factors that have negatively influenced production. The comparative study between the two types of agriculture can make an overview of the advantages and disadvantages of using inputs in agriculture from an ecological and conventional perspective as shown in Fig. no. 1. When it comes to the differences between conventional and organic farming, things are pretty simple: Conventional farming uses artificially synthesized inputs while organic farming uses naturally created inputs. For a better understanding of this comparative study, an approach in 3 directions is considered necessary:

1. Management of PPP use (plant protection products)
2. Management of the use of fertilizers and flavor enhancers
3. Soil ecology management

Insect & Plant Pest Management

The plant protection products are used in conventional agriculture in order to increase the productivity and quality of the crops as raw materials for the processing industries but also for the wide consumption, to provide the necessary food for the population in a continuous growth, to contribute to lower global prices correlated with the increase of the supply of agricultural products, to protect the public health of some communicable diseases caused by the presence of pests and to allow a better conservation of the organic matter in the soil while eliminating the invasive weeds dangerous to maintain the production at an acceptable level. The main purpose of using PPP in conventional agriculture is to produce more food and higher quality and this main objective determines positive effects on the environment such as: reducing the expansion of agricultural land to forests or forest lands, thus preserving biodiversity in the respective ecosystems, reducing erosion of soils and the conservation of natural resources. Also, the use of PPP over time has been considered indispensable, preventing the population even from the appearance of malaria that in some areas was combated by using insecticides and protecting some areas covered with vegetation from invasions of locusts or other harmful insects. The major importance of PPP utilization is materialized in percentages so that the average productions increased by 20% -50%, which allowed to maximize the benefits of other types of inputs such as fertilizers, seeds, and water for irrigation, with positive effects on the ease of work. Farmers who in less developed countries represent less than 3%, being replaced by the mechanization of agriculture, while in poorly developed countries, persons engaged in agricultural activities exceed 50% of the total active population. This correlation is supported by the reverse proportional relationship between the degree of development of a country and the share of agriculture in GDP. Researches from the last decade bring to the fore that the European Union effectively regulates the use of plant protection products in conventional agriculture and that it prohibits the use of high-risk substances for human health, concluding that their use under the LMA (maximum permissible limit) is totally safe. Of course, the irresponsible use of these substances or medicines for veterinary use can have adverse effects and are unsafe for human consumption including substances such as methyl parathion, chlorpyrifos, dimethoate, and diazinon), acetylcholine esterase inhibitors (metham sodium is the most used), GABA-gated chloride channel antagonists (endosulfan), pyrethroids and pyrethrins. To minimize the risks

of chemical residue depletion in finished products, organic farming uses natural measures to prevent diseases and pests and to manage outbreaks. The use of the physical and biological control agents is materialized by the following actions: biodynamic measures, mineral and biological balance in the soil, rotary and animal grazing programs, planting companions, harvesting traps solarising the soil - where an appropriate rotation can not take place. Biological control and protection of predatory habitats, mechanical controls, such as traps, barriers, light, and sound, mulching and slash, - Stings with flames and steam.

Fertilizer Inputs

Modern agriculture is a feature of developed countries, with a high degree of industrialization and has a more commercial character. In this sector, considerable quantities of fertilizers are used in relation to relatively small areas and modern techniques. Zootechnics has a weight that far exceeds that of phytotechnics and is practiced in farms specialized in market crops. The inspection activity (IF) ensures compliance with the provisions of Regulation (EC) no. 2003/2003 regarding the circulation of chemical fertilizers, but also of the national legislation in the field, both by all economic operators and by end-users (farmers). The production branch of fertilizers is carefully monitored and managed by the large monopolies, and the number of the employed population is low, although productivity is imposing. Regardless of whether the plants are grown for general consumption, the production of raw materials for the processing industries or agricultural lands cultivated for the production of fodder, in conventional agriculture fertilizers are used which have a number of undesirable side effects such as: increase of risk appearance of chemical residues arising from the use of synthetic fertilizers, the proliferation of parasites from vegetable crops and from the zootechnical sector, eutrophication of watercourses. The most commonly used chemical fertilizers in conventional agriculture are: urea, diammonium phosphate, urea ammonium nitrate, mono ammonium phosphate, anhydrous ammonia, sulfate of ammonia, etc.

In organic farming, the concept of fertilizer is delimited around the main role that fertilizers play, namely the supply of nutrients for plants but also a secondary role linked in particular to sustainable development and environmental protection - to enrich the cultivated land. Organic or mineral fertilizers in which nutrients, hardly soluble are mobilized with the help of microorganisms in the soil, moistening the soil and providing a microfiber film to reduce the risk of soil and deep water pollution are the most effective alternatives to using artificial fertilizers. Fertilizers used in organic farming are: compost, composted manures, rock specks of dust, seaweed, calcium carbonates, beneficial organisms, mined dolomite, magnesium carbonate, etc.

Soil Ecology Management

The anthropic interventions from conventional energy-intensive agriculture determine negative trends in the forecast of soil evolution worldwide, the negative effects being manifested on several environmental resources: water, air, flora and fauna. The intensification of the mechanization regarding the soil works, remains an important aspect that the agrotechnical link being recognized the most efficient technology of cultivation of agricultural plants but it also brings the degradation of the soil that can be approached from the point of view of the nutrients present in the chemical composition of soil (fertility), physical degradation including destruction, erosion, crustification and secondary compaction, agrochemical degradation and surface and deep water. In highly industrialized and developed countries such as Belgium, the Netherlands, Germany, Switzerland, agricultural consulting centers, guide the farmers towards a new strategy for using different types of fertilizers, severe reduction of application quantities in the following years, but under the conditions of maintaining the balance of different nutrients in the soil (Oenema and Jansen, 2005).

In the ecological agriculture actions of protection against the acceleration and the extension of the processes of degradation of the soils and the resources of the natural environment are practiced and the main emphasis is placed on maintaining and improving the chemical composition of the soil that preserves the nutrients and the biodiversity. An ecologically cultivated soil will continue to have more humus, having a higher nutritional structure than the chemically fertilized soil, which reduces their susceptibility to erosion and clogging, thus being able to better absorb rainwater and to withstand longer periods of drought or with low rainfall. The contribution of biomass activates the soils and increases the natural biodiversity. Eco-friendly pest control alternatives to synthetic/chemical pesticides

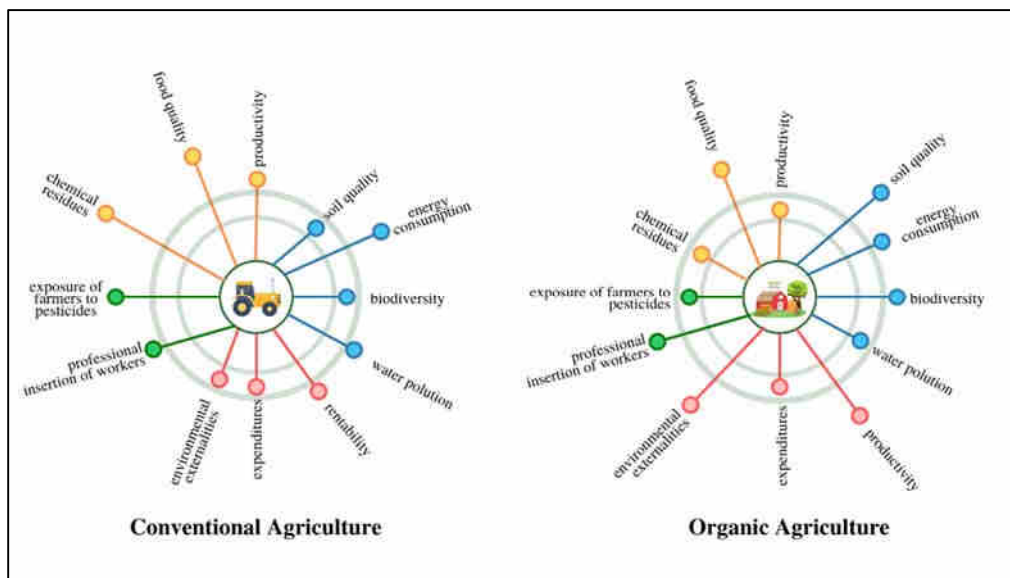


Fig. no. 1 Comparative analysis between conventional and organic farming

Source: Personal processing based on present research

Organic farming represents an efficient global system of agricultural management and food production that combines best environmental practices, conservation of natural resources, a high level of biodiversity, the application of high standards for animal welfare and a production method that respects the preferences of certain consumers for the products obtained with the help of natural substances and processes. The role of this agricultural management system is to produce cleaner food, more suited to human metabolism, in full correlation with the conservation and development of the environment. One of the main goals of organic farming is the production of fresh and authentic agri-food products, respecting the natural and environmental factors. In the first stage of the agri-food chain, the use of synthetic fertilizers and pesticides, genetically modified organisms (GMOs and their derivatives), growth stimulators and regulators, hormones, antibiotics, etc. is prohibited on the farm (production stage). During the processing stage, the use of synthetic chemicals, food additives and their complementary substances for the preparation of organic foods is prohibited. Organic farming has a major contribution to the growth of economic activities with an important added value and to increase the interest for the development of the rural area, and to the sustainable development of the agriculture. The objectives, principles and norms applicable to organic production are included in the Community and national legislation in this field. These norms, together with the definition of the production method in the sector of vegetable, animal and aquaculture production, also regulate the following aspects related to the organic farming system: processing, labeling, trade, import, inspection and certification.

The European provisions regarding the labeling of products obtained from organic farming, established in Regulation (EC) no. 834/2007 of the Council on organic production and labeling of organic products and in Regulation (EC) no. 889/2008 of the Commission establishing the rules for applying Regulation (EC) no. 834/2007 are very precise and consider giving the consumers complete confidence in the organic products, as products obtained and certified according to strict rules of production, processing, inspection and certification. One of the essential conditions for the extension of organic farming at the European Union level is the promotion of the concept of organic agriculture in order to make consumers aware of the advantages of consuming organic products so that they offer a higher price for clean products whose quality is guaranteed by a system. Inspection and certification. Education in organic farming, in order to train specialists in this field, is a concern of the higher education institutions. The various actions of informing the producers, training and promoting the concept of organic farming are carried out by state and private organizations. The problem of crop destruction due to diseases and pests that most often have a devastating effect on the economy. Rodents, mosquitoes and cockroaches are carriers of bacteria and germs that can cause diseases that are very dangerous to human health and can even lead to death if not treated properly. In this case, the safest method of combating diseases and pests has always been the use of PPPs (plant protection products), which, used within limits set by the European Commission, do not harm human consumption. But the irresponsible use of this and the zootechnical sector in which antibiotics and growth agents are usually used negatively influence public health. Organic farming tends to find the most efficient solution to replace artificial chemicals with eco-friendly ways of protecting plants and animals against diseases and pests. The ecological methods of pest control that are safe for public health and the environment are:

Insectary Plants

The use of aromatic plants such as rosemary, peppermint, marigold and thyme can have beneficial effects on crops because this type of plants produce nectar that attract honey bees and keep pests away by their strong odour and the substances they secrete. At the same time, bees attracted by the smell of these plants pollinate the plants, thus ensuring the continuity of the crop.

Diatomaceous Earth

Diatomaceous Earth is the name of a powder resulting from the combination of microscopic particles of shells, algae and silica and can reduce the number of insects that are harmful to crops by their physical destruction, with high efficiency against insects with soft bodies such as fleas, ants, snails, caterpillars, thrips, roach and root maggots. This powder is safe for the environment and for consumption and its action is determined by the sharp particles which inflict physical damage to the cuticle of an insect and determine leaks vital body fluids resulting in dehydration and eventually death. However, this control method can also wreak havoc on good insects that help plants grow and multiply.

Birds and Mammals

Creating a pleasant and conducive environment in open field crops can attract birds and small friendly mammals that feed on the insect pests of the respective culture, so using PPP is no longer essential as these species can ingest large amounts of pests including: snails, slugs and caterpillars

Mulching

This essential agricultural practice widely used in open field crops simply allows a protective layer of a material that is spread on top of the soil being an ecological method of pest control and helps reduce the harmful effects of sunlight and rain, reducing soil damage, prevents weeds growth and creates an environment that changes plant growth and development

Neem Oil

The substance derived from neem trees can poison insects and stop their growth and development. Neem oil can be applied as foliar or soil spray and has negative effects on insects such as: white flies, aphids, loopers and mealy bugs. The use of neem oil is dangerous for beneficial insects but has no adverse effects on mammals.

Insecticidal Oils

This control method is efficient on the insects that these substances choke, leaving them without oxygen, so the eggs of insects and the complete undeveloped insects are very sensitive and die. Insecticidal oils can be used to control spider mites, mealy bugs, aphids and psylla.

Conclusions

For a long time, crop protection was largely based on the use of chemical insecticides. However, these can be harmful to humans and pets, while there is a risk of groundwater contamination. Chemical insecticides also cause harmful changes to beneficial organisms. As a result of the toxicity caused and the evolution of the resistance of the insect populations, alternative pest control tactics are needed, which will contribute to an effective and sustainable crop protection. Organic insecticides are insect management agents that have shown a high potential in protecting fruit trees, vines or other agricultural crops, without being aggressive at the time and after application. Moreover, they have a high selectivity for beneficial insects and a reduced impact on the existing fauna. Being composed of natural extracts, they will reduce the amount of chemicals used previously and do not require waiting time between application and harvest. They can also be used in organic farming, the products being manufactured in strict compliance with the high quality standards. They have a biostimulatory effect, thus favoring the rapid and healthy growth of plants. Non-toxic and with rapid decomposition, biological insecticides are the best solutions for farmers who want rich crops with more resistant plants and rapid growth. As can be seen in Fig. no. 2, organic agriculture brings many benefits to the environment and the sustainable development of the economy.

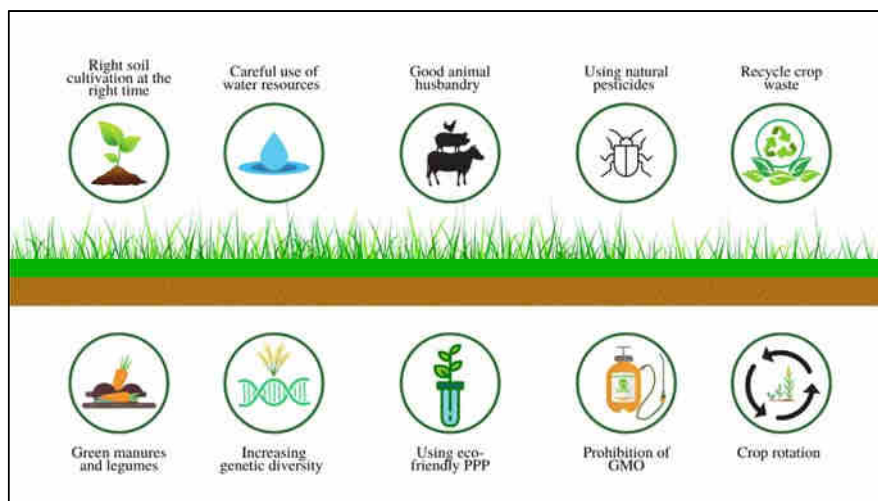


Fig. no. 2 Advantages of eco-friendly plant control methods

Source: Personal processing based on present research

But despite the benefits listed in Fig. no. 2, eco-friendly alternatives used in organic farming cannot destroy all pests. One of the major problems in horticultural plantations and crops, including vegetables, is nematodes. Scientific studies report about 20,000 types of soil nematodes identified. They nourish the roots of the plant and reduce the absorption of water

and nutrients, which reduces the yield. In addition, the infested plant becomes more vulnerable to other stressors, such as heat and other microorganisms that cause disease. Nematodes are difficult to control with common chemical pesticides. An alternative to these is Marigold extract and seaweed, which reduce the development of nematodes and ultimately destroy their population.

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VALUE TRANSFORMATION: FROM INTERNAL CAPABILITIES TO BLOCKCHAIN-BASED BUSINESS MODELS

Luciana-Floriana Holostencu¹

¹⁾ *The Bucharest University of Economic Studies, Bucharest, Romania*

E-mail: luciana.holostencu@yahoo.ro

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Abstract

The ongoing progress regarding blockchain technologies, apart from its main focus on cryptocurrencies, has illustrated features and functionalities that started a market revolution beyond the financial instruments, therefore ensuring the creation of a new era of Blockchain-Based Decentralized Business Models in the context of a sharing economy. This brief theoretic study explores the relationship between value and different business models until the implications of blockchain technologies and their underlying value drivers. Hence, based on a comparative and integrative analysis, I draw a brief picture on the adjustments suffered by Porter's value chain in order to create competitive advantage and utility for end-users in an emergent and innovative sharing economy. This introductory analysis is trying to cover value's evolution in relation to technological and cryptographic transformations by means of artificial intelligence, smart contracts and other decentralized application successfully used in the blockchain business models. Therefore, the study attempts to provide to both practitioners and academics a broad yet brief overall vision that assesses characteristics of value in relation to different stages of business strategies and models.

Keywords

Blockchain, digital business model, value chain, value creation, value dimensions, value capturing

JEL Classification

D46, Q55, M21, L86

Introduction

Thinking about a firm's competitive advantage, in most cases, leads us to the concept of a firm's ability to create more value than its market opponents (Porter, 1985; Brandenburger and Stuart, 1996). The higher innovation capabilities of the firm, the greater and lucrative the value creation will become. In order to secure the returns from innovation, many firms have turned their attention into becoming technology pioneers in their field by proposing key

innovations to the market (Adner and Kapoor, 2010). Nonetheless, in order to achieve a thriving success, a solely innovative approach does not represent the key to successful creating value, but depends on the constitution of an internal system of changes build upon an external network that embeds different actors into creating an ecosystem of complementary innovations (Adner, 2006). Moving beyond Porter's value chain framework (1985) and concept of competitive advantage, the process of creating value has later started to be understood from an ecosystem perspective, as a business strategy that consists in an approach for creating interdependencies between partners (Iansiti and Levien, 2004) that are described via both competition and cooperation (Afuah, 2000). Considering the uprising of Information and Communication Technology (ICT) (Perez, 2002) this type of collaboration has broadened its possibilities for creating an economy based on communication and sharing. Therefore, this context has created the opportunity for individuals to focus on specific individual and group projects in order to create value based on their own personal contributions and capabilities (Pazaitis, De Flippi and Kostakis, 2017). Those types of endeavors have now prepared the framework for the 'sharing economy' which developed into a new stream of business models where an individual allows to another individual the temporary use of services or goods, exchange facilitated by dedicated platforms (EC, 2016). Hence, the process of sharing becomes an equivalent to economic production based on social relations, whereas, the sharing economy involves the production of goods or services that are valued by virtue of an apparatus of social sharing (Pazaitis, De Flippi and Kostakis, 2017).

Even though we might think that the concept of a sharing economy represents a new idea, Coase highlighted in 1937 the fact that firms represent an alternative to the market-price mechanism when it would be highly efficient to produce in a non-market private agreement. While over the years value was created and co-created in extensive hierarchical manufacturing or service industries (multi-divisional business models) with substantial numbers of employees (Andreassen et al., 2018), nowadays, this system seems to have hit a dead end regarding the current perception of value on both customer and provider's side. Both Coase (1937) and Williamson (1981) predicted that by the year of 2050 all transactions occurring between individual buyers or sellers will be performed via high-tech platforms (e.g. AirBnB, Uber) in a collaborative decentralized economy based on peer-to-peer transactions (e.g. blockchain technology) phasing out middlemen and therefore, decreasing cost and increasing value and accessibility. Considering the new era of technology and development, those types of decentralized businesses have grown to our attention as T-model businesses (Andreassen et al., 2018) where the process of creating value takes place by facilitating interactions between parties on the base of an on-line platform.

But what is the meaning of a business model (BM) and how is value created or illustrated according to a specific BM? This concept has been long debated. In the context of rapid advances in ICTs, according to Magretta (2002) each firm is characterized by a BM, because it can provide further understanding regarding communication, management or strategic decisions (Osterwalder et al., 2005; Shafer et al., 2005) between business and technology stakeholders (Gordijn and Akkermans, 2001; Al-Debei and Avison, 2010). The BM's structure is relevant because clarifies the primary components of the concept regarding it's design, analysis or evaluation and has been depicted as means of creating value (Kallio et al., 2006) with different approaches regarding the concept of value dimension (Al-Debei and Avison, 2010). Moreover, in the digital economy, gaining competitive advantage has become a real issue if the company fails to take action by approaching a clear position regarding the creation of value. Therefore, Al-Debei and Avison (2010) mapped out a concept of the digital BMs that consider four core elements: value creation logic, value capturing mechanisms, value delivery architecture, and value stakeholder network. In this new dynamic context of information technology which has greatly revised market structures and firms competition (Bharadwaj et al., 2013), both scholars and practitioners have turned their attention to

blockchain technology as an advancement for carrying out trustless transactions (Risius and Spohrer, 2017) and frictionless and efficient ways of creating value.

Therefore, this study attempts to offer a brief overview on the adjustments underwent by the process of value creation, exploring its sources from a strategic, management and technological perspective.

Research background

By way of reviewing sources and configurations of value creation depicted by a wide spectrum of theoretical perspectives in entrepreneurship, strategic management and tech literatures, the study will focus primarily on the value creation potential embedded by blockchain technology in emergent tech markets. Moreover, the research will be focused on literature concepts starting from Porter's value chain analysis to the strategic network theory and ending with the late perception of value in blockchain technology. During this analysis theoretical concepts will be accompanied by practical examples originated from secondary data sources.

1. The value chain framework and its configurations

Porter's creation (1985) represents the leading reference regarding the concept of value chain and value configuration evaluation for creating competitive advantage as in the process of transforming inputs into outputs for a company. Respectively, it explains a firm's sequential process for adjoining production partners (Fjeldstad and Snow, 2017) with the sole aim of creating and delivering value to the chain's end consumers (Hua et al., 2019). However, in his work I could not find the value 'configuration' analysis because according to Porter value chain is the only value configuration recognized. According to this framework, competitive advantage derives from the disaggregation of the value creation process into a two-level generic taxonomy of activities. While primary activities (inbound logistics, operations, outbound logistics, marketing and sales and service) imply creating and delivering value to the customer, support activities (procurement, technology development, human resource management and firm infrastructure) represent a performance facilitator of primary activities (Porter, 1985). The end resulting activities will get the potential to generate different economics, being characterized by having a significant impact on differentiation or by representing a significant dimension of cost. Regardless Porter's (1985) popular framework of value chain, Stabell and Fjeldstad (1998) argued that its value creation logic might not be utterly interchangeable to service industries such as banking, tourism, insurance and even technology development, by virtue of their intangibility attribute, therefore, implementing the traditional value chain becomes a slightly limited aim (Peppard and Rylander, 2006). As a result, the authors introduced a new taxonomy of value configurations that incorporate value shop and value network in addition to Porter's value chain (Stabell and Fjeldstad, 1998).

Whereas the value chain represents a horizontal and sequential business process (Hua et al., 2019), the value shop is based on recursive feedback learning circuits (Gray et. al, 2013). Businesses that carry out their activities as value shops create value by assessing ongoing circumstances and adapting those by means of iterative learning as far as a desired solution will be identified (Kazan et al., 2015) in order to resolve a particular customer problem (Stabell and Fjeldstad, 1998). On the contrary, businesses running as value networks create value by facilitating technologies to assist interactions among network actors. Consequently, value networks can be represented by their "dyadic", "polyadic", "parallel" (Hua et al., 2019), and/or concurrent activities (Kazan et al., 2015) whereby network parties (e.g., consumers, firms, suppliers) contribute to the co-creation of value (Peppard and Rylander, 2006). According to Fjeldstad and Snow (2017), all firms, regardless of being perceived as classic or digitalized, should assume one of the three types of value configurations briefly analyzed in this section: value chain, where value is created through sequential processing of inputs into desired outputs, value shop, which utilizes its internal capabilities for problem solving

and value network which co-creates value by means of mediating technologies (Hua et al., 2019).

2. From the Triadic Model to value dimensions of a Digital Business Model

A business model can be represented as the “design or architecture of value creation, delivery, and capture mechanisms (a business) employs” (Teece, 2010, p. 172), or as a package of definite activities and activity systems handled in order to satisfy anticipated or identified needs of a market, in conjunction with the specification of which parties (a firm or its partners) perform which activities, and how these activities are interrelated (Foss and Saebi, 2018). In the literature, this BM is often referred as the T-model via the representation of a two-sided market (Hagiu and Wright, 2015) where suppliers provide assets (e.g. accommodation - Airbnb or car - GetPony) or labor (e.g. free time - Uber Eats) for buyers to use, in exchange for a fee or another resource (Andreassen et al., 2018). Therefore, the platform portrays the traditional middleman ensuring a direct connection between buyers and suppliers (Gatautis, 2017) by “selling reduction in transaction costs” Munger (2015, p.199). Moreover, while transaction costs are substantially diminished, it can be argued that the T-model’s triumph may also be determined by the new business model, offering increased customer and supplier value added (Sexton, 2009).

From a supplier’s angle as in a person who is interested in offering to other people his time or assets, there are the gains on multiple levels: from an easy access to a national or international marketplace to the conveniently promotion of the business. On the other side, for the person interested in using the provider’s assets, services or time the main advantages reside in a wide range of opportunities and information via the access to market, cost-reduction, and even potentially personal services better tailored to their individual needs (Andreassen et al., 2018). Therefore, T-based BMs favor companies to innovate by the means they create, deliver, capture, and communicate value in new significantly distinctive approaches from the multi-divisional BMs. Theoretically, the creation of a sharing economy has deepened the interest manifested by scholars regarding the analysis of a BM, therefore, I found two main streams of research on the topic. On the one hand, management scholars have sought to understand how essential business processes are designed to create and capture value (Bharadwaj et al., 2013). On the other hand, information systems researchers have tried to tackle the value dimensions that determine value creation and capturing in digital settings (Al-Debei and Avison, 2010).

As mentioned in the introductory part of the analysis, Al-Debei and Avison (2010) illustrated interpretation of value in digital BMs as four distinct key elements: value creation logic, value capturing mechanisms, value delivery architecture and value stakeholder network. Because the value creation logic was broadly depicted in section one of the current title, our attention will be directed to the other three types of value dimensions. In a digital BM, the apparatus for capturing value expresses the firm’s rationale on extracting revenue by providing digital products or services (Kazan, et al., 2015; Hua, et al., 2019). The value delivery architecture of the digital BM is mostly based on firms’ resources and their specific structure (Al-Debi, et al, 2008). Considering its’ resourced-based origin (Wernerfelt, 1984) the concept of value delivery architecture, emphasizes how digital firms grasp and profit from technological resources in order to sustain or even create a competitive advantage. Therefore, the value delivery architecture can be defined as a “firm’s structural capabilities to orchestrate its technological resources to provide digital products and services” (Hua, et al., 2019) that cannot be easily imitated (Kazan, et al., 2015). The value stakeholder network involves an ecosystem in which different companies are interconnected by the means of a network to co-create and interpose configured resources and components to collect value in an in-depth, coordinated methodology (Kazan, et al., 2015; Hua, et al., 2019). Further on it illustrates how firms correlate and collaborate with their stakeholders to provide digital products and services (Osterwalder, Pigneur and Tucci, 2005). By stakeholders the authors include all participants

who engage in different firm functions, probably including consumers, distributors, intermediaries, partners, and suppliers (Rajala and Westerlund, 2007; Hua, et al., 2019).

Due to the fact that blockchain companies, considering their technological characteristics, are very much alike firms competing in digital environments but at a higher level of automation, the aforementioned value dimensions of digital business models could be easily applied to unwind the rationale behind blockchain-inspired BM pursued by these companies.

3. The Blockchain Technology and value

At the hand of math and cryptography, blockchain represents a data architecture that facilitates the creation, distribution and storing of a digital ledger of transactions among a dispersed network of computers, which creates a decentralized and distributed database useful in transactions regarding money, goods, property, contracts, work, transportation, healthcare or even voting (Kiviat, 2015; Lemieux, 2016). This technology favors the creation of a record whose authenticity can be verified by the community involved in the process, which constitutes blockchain “trustless” technology. By “trustless” can be understood that “value” over a computer network that can be verified, supervised and enforced without the need of a trusted third party or central institution (e.g. the Triadic BM). The idea is often known as in “cutting out the middleman” and creating a peer-to-peer (P2P) network where a transaction is performed directly between two parties as in the case of a financial cryptocurrency like Bitcoin (Dutra, et al., 2018). Transposing the idea of a P2P network to current online platforms, several new tech startups aspire to create a “trustless” alternative to the “sharing economy” platforms (e.g. Airbnb, Uber, BlaBlaCar) contouring new decentralized blockchain based sharing economy business models (BSEBM) where customers and suppliers make transactions directly using blockchain technology with the main goal of having a transparent and decentralized data storage and cutting costs on transaction fees (Tapscott and Tapscott, 2016a). As blockchain technology is said to facilitate “the exchange of value” skipping the need for an “intermediary” (De Filippi, 2017), blockchain companies operating as value chains aspire to convert inputs into desired outputs in an adequate approach (e.g., producing valued market outputs such as new cryptocurrencies via mining) (Kazan, et al., 2015), whereas those operating as value networks offer mediating services among network actors (e.g. facilitating frictionless transfers of value (fintech) – Ripple). There are also blockchain companies that operate similar to value shops providing solutions to clients (Hua, et al., 2019) (e.g. helping a company to the implementation of a blockchain).

In the new current blockchain and cryptocurrency literature, based on Al-Debei and Avison (2010) four value dimensions of digital business models, Hua, et al. (2019) proposed a few case studies regarding the new BSEBM and the way that value dimensions are perceived. Despite the fact that all four value dimensions can be encountered in new BSEBMs it is relevant to emphasize that value delivery architecture is represented by the blockchain itself, and essentially all blockchain companies rely on this chain as in their primary value delivery architecture that ensures the connectivity between participants and determines the information circuit. A comparable situation involves the value stakeholder network where stakeholders, even though they have to perform mainly the same tasks, their identity is protected by the anonymity feature of the distributed ledger. In other words, the activities executed by stakeholders regarding the authentication and inscription of data transacted onto the ledger are identical, the only differentiation variable being the variations created by stakeholders’ activities on the chain (Hua, et al., 2019). Therefore, the process of innovation via different value dimensions can consist in originality and efficiency despite the two common value dimensions to all BSEBMs: delivery architecture and stakeholder networks.

Future blockchain business innovations will probably consist in terms of value creation rationale (logic) and value capturing mechanisms, because the creation of value must be strongly bound to its capture in order for a businesses to triumph and outperform its competitors (Hua, et al., 2019). On a value creation logic BSEBM, value could be created by

innovating on the blockchain architecture and building it as an open platform that third parties can use to develop their own business applications (e.g. the case of Ethereum where parties can build Dapps). Also, value could be created by displacing incumbents from conventional value chains (e.g. an interbanking cash transfer system that connects banks and provide frictionless transactions – Ripple and its decentralized ledger technology). In other cases, value could also be created by settling inefficiencies in conventional value chains (e.g., a traceability app for a product that leaves a storage in order to reach its final consumer – VeChainThor ecosystem). On the other hand, regarding the value capturing mechanism, on a BSEBM value is already captured by acting as a market equalizer for players who have been disadvantaged in conventional value chains (e.g. ChainFinance, Ripple) like the banking system (Hua, et al., 2019). In other instances value is captured via offering benefits to both parties who take part in the conventional value chains or for new solutions that can be transferred to other industries.

In the end, there are many ways in which this new stream of business models can be analyzed. For example, Al-Debei and Avison's (2010) value dimensions could be applied to Stabell and Fjeldstad (1998) value configuration therefore, discovering new types of BSEBM that will create real utility for both parties that are making use of the blockchain.

Conclusions

The Blockchain technology, with its reprimanded route as an innovative infrastructure for transferring value in cryptocurrencies, mainly Bitcoin, has managed to create a decentralized system defined through anonymity and lack of legal regulation, which lately proved to be useful also for organizations, therefore expanding its use case beyond the currency markets. To better understand how value might be created, captured, developed or manifested in these new types of business models this study attempted to briefly illustrate the value path in the business environment, considering all actors interested in the exchange of value and new methods for obtaining utility and reducing useless cost, generated by lack of sufficient development or the involvement of third middlemen parties. To deepen the analysis I tried to overlay Al-Debei and Avison's (2010) theoretical concepts to Stabell and Fjeldstad's (1998) and Hua, et al. (2019) analysis, who managed to illustrate new created patterns in blockchain-based business models.

There are many limitations to the present research mainly because it briefly illustrates how value perception has influenced the creation of new business models in the digital era. Moreover, it cannot be define by generalizability because the author used a few succinct examples in order to create an overall image regarding the concept. For further research it may be recommended the use of this theoretical framework in different case studies, with the technology representing various blockchain stages that are built upon each other (from blockchain 1.0 to blockchain 4.0) depicting their different purposes and functionalities that enable the creation or caption of value on different stages.

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STUDY ON INFORMATION SECURITY MANAGEMENT SYSTEM AND BUSINESS CONTINUITY MANAGEMENT IN THE CONTEXT OF THE GLOBAL CRISIS

**Georg Sven Lampe¹, Mihaela Maftai², Ioana Surugiu³
and Răzvan Cristian Ionescu⁴**

^{1) 2) 3) 4)} The Bucharest University of Economic Studies, Romania

E-mail: georg.sven.lampe@gmail.com; E-mail: mihaela.maftai@ase.ro;

E-mail: ioana.g.surugiu@gmail.com; E-mail: razv77@gmail.com

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Abstract

Parallel to the need-based expansion of business processes with new “intelligent” technologies and automated applications within digitization, the continuous further development of the technical and organizational adaptation processes to the security requirements in Business Continuity Management (BCM) from information security management system (ISMS) is indispensable. A protection against global and local threats to the value-adding business processes is required. For this purpose, the efficiency and use of measures from the ISMS must be fully integrated into the BCM, so that critical infrastructures remain unaffected in the event of disruptions outside of information security. Such value maintenance is central to the relationship between business continuity, business strategy and information security. However, the strategic potential for managing global risks in emergency and crisis situations, such as epidemics and pandemics through crisis management (CM) within the BCM of ISMS, is largely unexplored. Many service companies show different approaches to business continuity and how to deal with specific threats. Therefore, the previous model of information processing and business continuity for emergency and crisis situations must be brought into line and with expanded measures. Practical principles for the analysis and implementation of risk management process (RMP) as well as key factors are presented, which draw attention to an improved preservation of value. Technical, organizational and personnel processes that ultimately connect the quantitative measures to be assessed and the bodies involved must be described with a quality of action that is classified by the ISMS according to quality and risk parameters for the BCM.

Keywords

Business continuity management, crisis management, risk management, information security management, digitization, risk processes, pandemic

JEL Classification

L15, L98, M10, M15, Q43, Q48

Introduction

The studies carried out by the authors propose to investigate the extension of the existing Risk Management Process (RMP) within the Business Continuity Management (BCM) and its impact on the measures of crisis management (CM) due to the epidemic / pandemic risk threat on the information security of the critical infrastructure managed supply and telecommunication services. According to ISO 22301 (2019), the RMP approaches for BCM are comparable and primarily relate to disruptions that can occur due to globalization and internationalization with outsourcing, out tasking and the involvement of numerous business partners. Local and global aspects such as epidemics / pandemics are specified here. Health aspects such as epidemics / pandemics are not specified in ISO 27001 (2013) in conjunction with the BCM. Therefore, the BCM from the ISMS must be supplemented by the epidemic / pandemic category with the corresponding measures. BCM has proven to be a systematic process to reduce the effects of crises and disruptions due to increasing threats in many industries. For this, preventive business continuity strategies and operational emergency and crisis plans are derived. It provides a framework for the own resilience of the business processes against risks and offers the possibility to protect the added value, the interests of the stakeholders and the reputation (Gibb and Buchanan, 2006). The companies should take the current emergency and crisis as an opportunity to adapt the existing emergency and crisis planning by the crisis management and if necessary to optimize it (Herbane, 2010). Furthermore, the prioritization of business processes according to the Business Impact Analysis (BIA) enables a restart in the correct order. Professional crisis communication allows companies to control social media as well as internal and external stakeholder groups instead of being controlled by them.

Literature Review

Organizations should adopt the principle of business continuity having a solid base that provides the opportunity of synchronizing the business continuity management with the existing management systems (Maier et al., 2014). Business continuity management systems (BCMS), information security management systems (ISMS), risks management systems (RMS), emergencies and crises management systems (CMS) today mainly depend on information and communication technology (ICT) based services and the associated risks. The increasing digital networking simplifies joint communication, coordination and cooperation (3C) and increases the competitiveness of companies. But at the same time, security threats (e.g. cyber-attacks) are increasing due to digital change. However, legal concerns and requirements for data security and protection are perceived as obstacles in digital transformation (Marquardt et al., 2018). An innovative digital transformation of systems and processes in companies also puts their ability to absorb resources to the test, as many show signs of overload (Cho et al., 2016; Järveläinen, 2012). All aspects that are necessary for the continuation of the critical business processes in the case of a damage event must be considered and not only information or telecommunications technology resource (Herbane et al., 1997). Availability and capacity processes are also important in order to provide information about the status and location of the human and IT resources that are critical in case of disruption (Ionescu et al., 2019). The IT emergency and crisis management of BCM within the ISO 27001:(2013) is consequently that shall ensure information security is therefore part of the BCM emergency management from ISO 22301. A holistic approach of the RMP for global and complex risks is therefore crucial in order to be able to react quickly and effectively to emergency situations (World Economic Forum, 2020). Due to the currently critical impact of a longer downtime of ICT services caused by the threat to public health in the event of an epidemic / pandemic, the importance of ICT-based fully automated supply of energy and telecommunications is emphasized (Lampe and Massner, 2018).

Research Methodology

Two methods are used to achieve the research goals. The first part of this work focuses on the theoretical aspects and the current state of knowledge of research articles, laws, international standards, best practices and studies on the management systems for business continuity, information security, risks, emergencies and crises. The second part represents the “practical” and “empirical” section of this study. For this study, business impact analysis (BIA) and the RMP methodology were carried out within critical infrastructures to complying information security. This is on the one hand due to the fact that operators of critical infrastructures within the meaning of the IT Security Act are committed to certify, after the BSI critical ordinance has been passed. On the other hand, the BCM only considers the availability of information in accordance with ISO 22301 and how the operational processes are guaranteed in the event of a crisis. Protection objectives such as confidentiality, integrity, availability and authenticity of information’s are not considered in this standard. For this intent, quantitative descriptive approaches were used to identify organizational variables (risks and controls) for the protection objectives, which can explain the success or failure of technical and organizational implementation efforts. The international standards on ISMS describe how operational continuity management should be implemented. Therefore, the existing model of information processing is to be expanded to include the elements for implementation. As a result, the second part examines the organizational requirements and the measures to be used by the BCM within the ISMS. A conceptual approach is being developed to demonstrate that the BCM also has a role for critical infrastructures in crisis situations within the ISMS. Within the analysis of the organizational measures used, supplemented by a specific literature search, authors intended to investigate whether the expansion of the BCM from the ISMS by integrating an epidemic / pandemic plan, the level of maturity and other information security management processes such as risk and communication could be improved.

Research Results and Discussion

The analysis of the specific literature showed that for the operators of business processes within the energy and telecommunications services as well as for operators of critical infrastructures, specific standards and guidelines that define the requirements for the ISMS and the BCM were issued. According to ISO 27001, the ISMS is intended to ensure effective protection of information and IT systems with regard to confidentiality, integrity and availability. For these risks, the legislative in Germany has set a “reasonable security” against threats to the grid control binding (§11 paragraphs 1a and 1b of the Energy Industry Act 2005 and the IT Security Act 2015). The IT Security Catalogs (SICAT) of the German Federal Network Agency specifies the security requirements for an “adequate security”. Network management related recommendations have to be complied in future as well. The key point of these requirements can be summarized in proof (as of 2018) of a functioning and certified ISMS according to ISO 27001 in combination with ISO 27002 (2013) and ISO 27019 (2017). According to BSI-Kritis Regulation (2016), energy network operators or energy grid operators of critical infrastructures were also legally obliged to report IT security incidents towards the German Federal Office for Information Security. This means that the core requirements for compliance with the protection objectives were set by the legal framework for energy network operators and energy system operators. In addition, the ISMS includes a BCM and is required to be implemented by the IT security law. The BCM from the ISMS begins with an analysis of the business impact and a threat analysis that identifies events, which can lead to an interruption of business operations and business processes. Once the threat is identified and registered through incident handling, a risk assessment must be performed to determine the business impact, likelihood of occurrence, and recovery time required for critical business applications and processes. This assessment takes into account only those business processes that relate to information technology. This includes, for

example, preventive and reactive measures in the cyber room against viruses. However, the international standards on ISMS don't describe how BCM should be implemented, as shown in Figure no. 1.

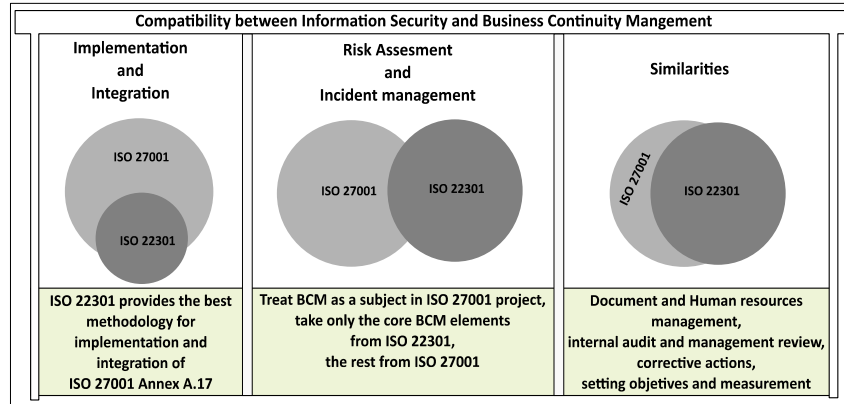


Fig. no. 1 Similarities and overlapping areas of ISO 27001 and ISO 22301

Source: Authors, 2020.

The ISO 22301 should be used for this intent, in order to reduce the risks of any kind of business interruption and to take the best possible precautions in the event of serious disruptions. Possible serious disruptions can be:

- Natural disasters such as floods or earthquakes;
- blackouts and fires;
- Disruptions and damage to the infrastructure;
- social and political upheavals such as unrest and political upheavals;
- local and global health issues such as epidemics or pandemics;
- Personnel or material losses due to attacks or accidents.

The main reasons for this are, on the one hand, increasingly IT-supported operating processes, and on the other hand, globalization and internationalization with outsourcing, out tasking and the integration of numerous business partners around the world. An intensive analysis of ISO 22301 shows that the view of risk management in particular is somewhat more special and is characterized by the terms as business impact analysis, business continuity strategies, solutions and risk assessment. The BIA is concerned with identifying potential problems and to evaluates them. The part of the BCM-RMP is mainly concerned with planning and testing potentially failing assets that would cause significant damage to the organization if they failed. The BCMS-RMP generally only plans or tests the failure of individual assets or subsystems in the organization. The basis for this is the BIA, emergency concepts and regular exercises (training). With regard to the protection objectives, only the availability of information and the operational processes in the event of a disaster are considered within ISO 22301, but not the protection objectives such as confidentiality, integrity and authenticity of information. Achieving the availability of data, which from the point of view of the information systems is the main objective of business continuity, is therefore also one of the main objectives of ISM. An organization's information security architecture is influenced by information security policies, risk management, internal and external audits. The objective of information security policy must be ensured so that employees understand the importance of information security and business continuity and act accordingly. Risk management is required to identify and assess information security assets and threats. It is therefore recommended to extend data security (authenticity) and data protection (intervenability, non-connectivity and

transparency) within ISO 27001 with integrated BCM by the associated protection objectives. However, the accumulation of the mutual linking of risks threaten entire societies, economies and international relationships. In order to answer the question of what risks exist for the assets of a company (assets) within the framework of the ISMS and BCM, regulations and protection objectives are defined. In addition, criteria for the acceptance of residual risks are specified. Based on the maximum development of product and service deliveries within energy and telecommunications, the following approach to risk assessment with regard to business activity is recommended:

- ISO 27001 for BSI 100-4 (2009) and IT Security Act catalogue - §11 paragraphs 1a and 1b of the Energy Industry Act as the basis for the power generation and distribution;
- Risk management adaptation for information security – compatibility with ISO 27002;
- IT security techniques – Information security risk management ISO 27005 (2018);
- Business Continuity Management ISO 22301;
- Determination of the potential conflict regarding the independent influence due to market situations for the provision of products and services;
- Determination of the confidentiality of substitute values for missing measured values as a function of time (expected value from measured value modelling);
- Risk reduction through a system regulation approved by the energy supplier.

Risk management is an iterative process of listing, evaluation and handling using the methods of international standards. This risk reduction should be done under the condition ALARP “as low as reasonably practicable”, i.e. the reduction to a level which allows the highest practical level of security with financially and technically justifiable effort. For this, the defined measures of the catalogue of controls are to be processed in their order and the risk treatment to mitigate threats is set. Selected controls are offered in several stages according to the defence-in-depth principle – increasing security and continuity by setting up several parallel security mechanisms – and are classified as follows:

- preventative: Physical access security, authentication and authorization, filters/firewall, training and awareness;
- revealing: Surveillance cameras, logging and monitoring, security and compliance scanning, firewall, security audits and reviews;
- correcting: Protection of operating procedures, intrusion prevention, security patching, incident response, emergency response.

The degree of achieving the fulfilled controls leads to a result, which in case of over-fulfilment represents a chance and a problem in case of under-fulfilment. Detected issues require re-capture, analysis, assessment, and policy definition. Detected problems require reanalysis, assessment and policy definition. With risk management approaches standard, conventional risks can be relatively easily isolated and humanity understands very well how to mitigate these risks. Fundamental elements such as energy and resource efficiency, renewable energies and sustainability are increasingly on the agenda of today's companies. Energy policies should be focused on sustainability and concerned in safeguarding a clean and healthy environment, as well as energy efficiency. Due to the compatibility of ISO 27001 and ISO 22301, the business processes to be assessed must be expanded with reasonable effort for the BCM with regard to the occurrence of serious disruptions in the ISMS threat catalogue. The organizational adaptation of roles and responsibilities is primarily to be carried out by the newly established emergency and crisis team. Proactive action measures in the event of a crisis enable employees to act in a targeted and structured manner in an emergency. Careless decisions and actions, especially in time-critical situations and under enormous emotional stress, can have significant negative effects without a defined crisis management process. Professional crisis communication allows companies to control the press, social media and internal and external stakeholder groups instead of being controlled by them. If additional knowledge from the training and, if applicable, real events are used for the targeted updating,

adaptation and further development of BCM, the BCM has reached its highest level of maturity. In the event of a pandemic, it must be possible to take the first measures within a few hours to days in order to have a minimal impact on staff availability. This is only possible by planning the preventive and reactive measures beforehand. Preventive measures are mainly aimed at preventing infection and the spread of the virus. Above all, this includes awareness-raising measures and the implementation of specific measures to prevent (initial) infection. A great deal of importance must be attached to awareness-raising measures, in particular, because the development of new viruses cannot guarantee the effectiveness of measures implemented to date. As a result, only the employee can prevent infection. A sensitized employee is more able to make an informed decision and thus reduce the risk of infection. This also applies to information security, which is significantly influenced by the actions of people in an organization. If an infection has already occurred, the reactive measure, the quarantine and the use of alternative resources to maintain an emergency operation are appropriate. In information technology, it is even advisable to go one step further and use preventive means to separate systems with different protection requirements using segmentation of IT networks. The pandemic plan becomes part of the BCM within the ISMS and represents the framework for effective pandemic management. This should consist of concrete and clear instructions, such as compile checklists for the implementation review. The four levels of the pandemic plan and business continuity planning by 3C within information security are presented below in figure no. 2.

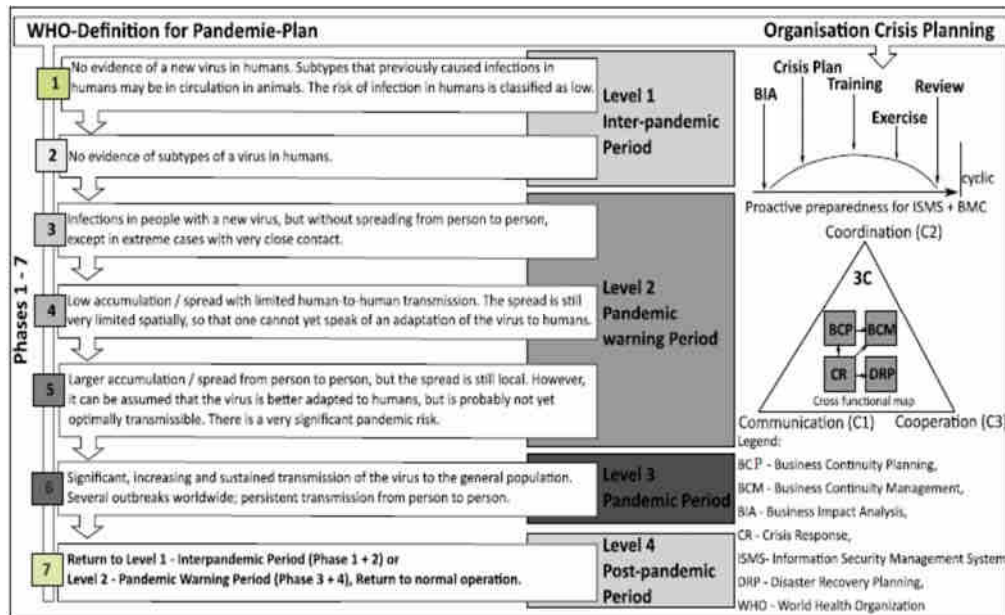


Fig. no. 2 Pandemic plan related to business continuity into ISMS

Source: Authors, 2020.

The BCM within the ISMS must include controls to identify and mitigate global risks, limit the consequences of harmful incidents, and ensure that business operations or processes are restarted in good time. BCM is often seen as part of information security because breaches of information security are one of the many possible threats to business continuity. The business continuity in the processes and structures is ensured through regular reviews and updates of the business continuity plans. Internal and external audits are used within the organization to

receive feedback on the organizational and technical measures of the business processes from the ISM and BCM.

Conclusions

With the ISMS, many protection objectives can be achieved and the information integrity within an organization can be guaranteed. In addition, business continuity can be well represented in a general management framework along with the associated additions of controls and control objectives. Although daily management activities derived from the Plan-Do-Check-Act are assigned to the management framework, in order to go beyond compliance and aim towards information security excellence, more advanced tools, as Six Sigma and EFQM, that foster innovation and digital transformation are needed (Olaru et al., 2017; Hohan et al., 2015). The additions take into account specific topics such as policy, organization, personnel, inventory, IT operations and IT communication as well as business continuity management from the ISMS perspective. While the BCM system of ISO 22301 always focuses on the “potential crisis”, ISO 27001 looks at everyday business life. Although ISO 27001 provides a good basis for the development of an ISO 22301-compliant system, its implementation usually means a systematic approach throughout the organization. If ISO 22301 is implemented alone, this can only be done for selected parts and not in completely. If an ISO 27001-compliant system already exists, it can build on its results. This expansion creates added value for the organization, since essential management procedures have been tried and tested. All that is required here is to add “BCM-specific points”, which results in an integrated management system. The security threats from cyber-attacks in intelligent automation and digitization structures and the probability of serious disruptions such as epidemics / pandemics are increase. By continuously developing the management of information security and information security risks during digital changes and the occurrence of global serious influences, disruptions in business process and business continuity management can be minimized.

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A STUDY ON FACTORS INFLUENCING SUSTAINABLE ENTREPRENEURSHIP IN EUROPEAN UNION COUNTRIES

**Teodora Elena Fogoros¹, Dorin Maier², Adrian Iordache³
and Gabriela Elena Bițan⁴**

^{1) 3) 4)} The Bucharest University of Economic Studies, Romania

²⁾ The Technical University of Cluj-Napoca, Romania

E-mail: teodora.elena@icloud.com; E-mail: dorin.maier@gmail.com

E-mail: adi.iordache@gmail.com; E-mail: gabriela_bitan@yahoo.com

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Abstract

The main feature of this paper is analyzing the relationship between entrepreneurship and sustainability, in the context of innovative times where sustainability represents a challenge for entrepreneurs to keep up with the market changes. Based on the fact that the main factors of influence on a business are the social factors, the environment, the politics and the finances, one of the objectives of this paper is to observe their impact on business development and how could it be used as assets to sustainable development. The purpose of this study is to identify the most susceptible domain of business on developing its sustainable side, on a European level. By selecting the most profitable businesses in Europe based on statistics and identifying their influencing factors, this paper managed to compare and classify it in terms of possibility to adopt a sustainable development. A larger documentation on this subject would help entrepreneurs to embrace new strategies and cross the barriers to help their businesses grow in a sustainable manner.

Keywords

Sustainability, sustainable entrepreneurship, sustainable development, influencing factors, European businesses

JEL Classification

M10, O1, L26, Q56

Introduction

Globalization, digitization and sustainability are one of the main domains of interest of researches in the latest year. Focusing on the evolution of entrepreneurship, recent research (Cigdem and Sefer, 2019) showed that the entrepreneurial domain became the crucial factor

of influence for production and employment. Moreover, by mixing entrepreneurship with globalization, we can observe its impact on the economic growth and improvement. In their research, Levine and Rubinstein (2017) consider that entrepreneurship is a variable, which depends on a resource, such as the human being, the social environment and the financial capital. Hence, it was sustained by Marquardt et al. (2017) that the quality of services provided by entrepreneurs is linked to the customer satisfaction, crucial factor of influence in the business domain. Looking back to the history of entrepreneurship, the rate of unemployment was the key aspect taken into consideration by the educational support and by the government when decided to invest in the young graduates to encourage them owning a business (Akinbola et al., 2015). Introducing the aspect that innovative ideas, which can increase the profits, may be generated as a result of driving a business globalized the concept of entrepreneurship, by generating new positions of employment and increasing market competitiveness (Zahra, 1999). Further research (Marquardt et al., 2018) showed that the need of organizations to focus their attention on the economy, ecology and social goals – known as the sustainability triangle – is vital, with the aid of politics, by turning sustainable thinking into law. As in any domain of activity, there are several factors of influence on business: uncertainty of business profitability, no capital for start up, lack of entrepreneurship education and no vision on the environment possible damages, referring to sustainability. Moreover, as concluded by Mateescu et al. (2016) on their research, risk management might also be taken into consideration on business development, to ensure the protection and cohesion of a firm. As pointed by Gyaneshwar and Nagendra (2017) in their study, even though the terms sustainable entrepreneurship, green entrepreneurship or eco-entrepreneurship are considered synonyms, the first term manages to differentiate from the others by focusing more on the environment and society, than financial profit (Pacheco et al., 2010). By a sustainable business, there is a need from entrepreneurs to protect the environment and the natural resources, by assuring the maintenance of business in time.

Research background

Entrepreneurship and sustainability

Understanding the link between entrepreneurship and sustainability means defining the terms. But there is no good definition for either of it: as entrepreneurship means developing its business by own capital, sustainability supposes the capacity of a business to last, by protecting the environment. Thus, sustainable entrepreneurship may be defined as the relationship of coexisting between the human and the biosphere or the relationship between sustainable development and business activities (Schaltegger and Wagner, 2008). On the other side, as stated by Iyigun (2015), there are three dimensions of sustainability (fig.no.1), related to each other: societal sustainability (the relationship between the company's value system and stakeholders' needs), economic sustainability (the company's capacity to handle its capital, the funds and the stock) and environmental sustainability (protecting the ecosystem in any possible way by the harming influences of the business sector). This is where the entrepreneur will get involved: his ability to adapt to the change (Iyigun, 2015) will motivate him to a successful way of transforming challenges into opportunities.

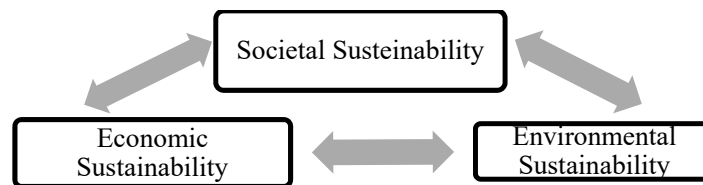


Fig. no. 1 The three dimensions of Sustainability

Source: elaborated by the author based on the research of Besler, 2009

Factors influencing sustainable entrepreneurship

In their research, Gholamhossein and Ali (2016) explained that the factors affecting the sustainable entrepreneurship in small and medium enterprises are the following: customer orientation, staff training, human resources and social supports. Also, it was confirmed that hiring people that supports the ethical behavior and the values of a company related to the environment is benefic (Hoffman, 2005). Taking into considerations the factors motivating the sustainable entrepreneurs, Gyaneshwar and Nagendra (2017) considered the following: their green perspectives, market gap, running their own business, earning a living and ultimately, passion. Though, this are considered factors of the internal environment. Apart from this, there are as well some influencing factors of the external environment, such as: green marketing, implication of the government, thinking eco-friendly (Gyaneshwar and Nagendra, 2017). The changes brought by the technology and the innovation in general, changed the way entrepreneurs leads their businesses. As observed by Pacheco et al. (2010), to develop an eco-friendly business, entrepreneurs should focus their attention first on influencing the customer's green behavior towards ecological products so that he believes in the green culture of the business.

Methodology of Research

This research is an outcome of an early PhD research, based on statistics made before the possible future changes introduced by the COVID-19 context. An empirical research will be made based on the existing scientific literature, having as main goal to identify the most inclined business domain to adopt a sustainable development, based on the factors that are influencing it and their association with sustainability. The chosen method was searching on Eurostat the most profitable domains of business in the latest years, identifying their factors of influence and then comparing it. All things considered, this research aims to help aspirant entrepreneurs to easily pave their way for a sustainable business.

Research results and Discussions

So that the study can be conducted, the relevant economic sectors in terms of profitability were identified at a European level, based on statistics labeled on Eurostat (table no.1). Further on this paper we will focus our research on these top five domains of activity.

Table no. 1 European economic sectors by profit rate in 2016

Economic sector	Profit rate in 2016 (in %)		
	Micro SMEs	Small SMEs	Medium-sized SMEs
Mining and quarrying	22,9%	25,3%	14,1%
Manufacturing	14,9%	10,8%	9,5%
Electricity, gas, steam and air conditioning supply	25,1%	7,0%	5,4%
Water supply, sewerage, waste management and remediation	17,2%	16,9%	19,2%
Construction	16,3%	10,0%	9,1%

Source: European Commission, 2019. Annual report on European SMEs 2018/2019.

To observe the actions that may be taken into consideration by the entrepreneurs in these economic sectors, in order to develop its business to a sustainable culture, we identified in table no.2 the critical factors of influence in terms of sustainability.

Table no. 2 Factors of influence in business services

Economic sector	Critical factors of influence in terms of sustainability
Mining and quarrying	•Traffic, noise and pollution increased due to lorries taking the limestone away •Destroying natural habitats by digging a pit •Dust and noise produced by quarries and landscape spoiling due to quarries
Manufacturing	•Minimization of creativity due to automation •Encouragement of global warming, due to chemicals and gasses used •Lack of human recruitment due to innovation and automation (robots are used instead of human being) and costs involved in machinery purchase
Electricity, gas, steam and air conditioning supply	•More pollution •Bigger prices •Natural habitats destroyed for the needed space of producing electricity •Risk of chaos if the electricity will be cut
Water supply, sewerage, waste management and remediation	•Large river catch and lot of rainfall needed •Possible silt up of reservoirs •Risk of earthquake •Possible waste of water in case of leakages in the system
Construction	•The ventilation and the air quality inside the construction may be affected due to poor design •Risk of damaging the structure of the roof by the plants, if the protection anti-corrosion isn't good

Source: Authors own research

By identifying the critical factors of influence in terms of sustainability, we observe that despite the factors related to natural habitats, pollution and waste of water, businesses are facing as well challenges due to technology advancement, automation and digitalization, often called the 4th Industrial revolution in the scientific literature (de Man and Strandhagen, 2017). In table no.2, the most influenced economic sector by the innovation is the manufacturing sector, which introduces robots instead of human beings. In their paper, Mocan et al. (2016) concluded that adopting a sophisticated robotic system on the manufacturing domain has a positive impact in terms of sustainability. Hence, to identify the most predisposed domain of business to improve its sustainable part, in table no.3 we chose to examine similar research papers in the scientific literature of sustainable entrepreneurship. To have an overall view on this subject, we examined the opinions of approximately 100 authors, between we chose 15 opinions most frequently encountered and then determined based on their theories the matching economic sector between the ones specified earlier on this paper. We numbered the economic sectors as it follows: Mining and quarrying – 1, Manufacturing – 2, Electricity, gas, steam and air conditioning supply – 3, Water supply, sewerage, waste management and remediation – 4, Construction – 5.

Table no. 3 Bases of sustainable entrepreneurship

Source of research	Authors' statement regarding sustainable entrepreneurship	Matching economic sectors
Shepherd and Patzelt, 2011	• By sustainable entrepreneurship, despite the nature, the ecosystems and the communities, the economy must be as well supported	1,3,4
Kuckertz and Wagner, 2010	• Sustainable development and its objectives must receive a positive influence from the entrepreneurial activities which has a sustainable base	1,2,3,4,5
Bocken, N.M.P, 2015	• Some of the causes of failure of sustainable businesses are the lack of knowledge	2,5
Bocken, N.M.P, 2015	• Innovation in the business models is opening the door to success	2,3,5
Bocken, N.M.P, 2015	• Entrepreneurs can strengthen the development of sustainable businesses by calling for current businesses and business models	2,3,4
Bocken, N.M.P, 2015	• New forms of financing such as crowd funding and peer-to-peer lending can facilitate the development of sustainable businesses.	4,5
İyigün, N., 2015	• Sustainopreneurship is a business with a cause – a world cause	3,4
Gholamhosseina and Ali, 2016	• The renewable energy sources must be used properly	3,4
Gholamhosseina and Ali, 2016	• While producing, there should be no environmental pollution and a use of resources in such manner to avoid a potential loss	1,2,5
Klein Woolthuis, R., 2010	• Creation of environment friendly products or services	1,3,5
Abiola, A.H. and Udo, M.A., 2017	• Sustainable entrepreneurship supposes to deal with the most claimed world problems, like climate change, finance crisis, political uncertainty, by managing to obtain the success of the business as well	3,4
Tur-Porcar et al., 2018	• The factors affecting entrepreneurial sustainability are: environment (social awareness, policies), business factors (profit, job satisfaction, business management), behavior (motivation, lifestyle, metacognition) and human relations	1,2,3,4,5
Vinokurova, N., 2015; Aparicio et al., 2019	• The gender represents one of the main points of interest regarding sustainable entrepreneurship	2,5
Butkouskaya, et al, 2020	• Youth entrepreneurship may be benefic for sustainability, due to prior knowledge of ecological assets, innovation and social value creation	3,4
Durst and Zieba, 2019	• Risks regarding lack of competencies in terms of sustainability among the employees	1,3,4

Source: Authors own research

In Figure no. 2 we counted how many times each economic sector appeared on the table, meaning that the theories of the authors matched their domain of activity. The most impacted economic sector with eleven matching statements, which may have the possibility to improve its sustainable department, is electricity, gas, steam and air conditioning supply.

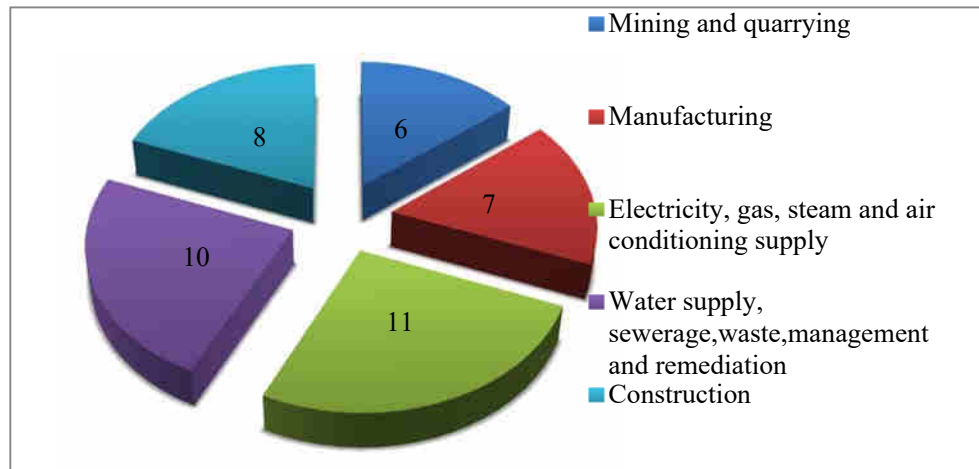


Fig. no. 2 Economic sectors identified to improve sustainability

Source: elaborated by the authors based on their research

Recent research concludes that the energy approaches in the E.U. should encourage the implementation of hydropower, wind and solar, and expel the non-renewable sources and bioenergy (Zurano-Cervello et al., 2019). Due to innovation and globalization, many industries utilize at the moment large amounts of electricity to get all the technologies for production to work (Ateba et al., 2019). This is the reason why the energy is the main interest for the United Nations (UN) Sustainable Development Goals (Mzini and Muhiya, 2014), organization which focuses on the environment of humans and which encourages the economic industry to efficiently use the energy to protect the social and economic growth. Also, it is considered that wind and solar PV are the most sustainable resources, comparing with coal (Cooper et al., 2018) and that equalizing the environmental, social and economic factors on the industries would increase the level of sustainability.

Conclusions

This paper concludes that sustainability represents a matter of interest nowadays and by considering several factors of influence, it can easily penetrate all the business economic sectors. Though, we concluded that the domain of electricity, gas, steam and air conditioning supply is the the main susceptible sector in adopting a sustainable culture, close to it is as well the water supply, sewerage, waste, management an remediation. Even though entrepreneurship represents an individual process, sustainability manages to create equilibrium between the economic sectors based on the factors of influence. As we observed in our research, the environmental factors may rely to the energy, but to the mining and quarrying domain as well; the technology advancement may affect the manufacturing domain, as well as constructions. Considering that sustainability increased its importance only in the latest years, it is clear that this subject will still be a challenge for entrepreneurship on the years to come. Though, we should take into consideration that in the context of COVID-19, the economic sector might dramatically change its order in terms of profit and the factors of influence can differ. We aim that this study will help aspirant entrepreneurs to better organize

their sustainable culture and to adapt to the challenges brought by digitalized and innovative times we are facing.

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A STUDY ON INFORMATION SECURITY IMPACT ON THE DELIVERY OF IT MANAGED SERVICES

Răzvan Cristian Ionescu¹, Marieta Olaru², Georg Sven Lampe³
and Teodora Elena Fogoros⁴

¹⁾²⁾³⁾⁴⁾ The Bucharest University of Economic Studies, Romania

E-mail: razv77@gmail.com; E-mail: olaru.marieta@gmail.com;

E-mail: georg.sven.lampe@gmail.com; E-mail: teodora.elena@icloud.com

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Abstract

The outsourcing of the IT infrastructure administration or contracting of some specialized IT services are common practices for many organisations. The reasons are multiple and vary, from the lack of internal IT competent staff up, to the fulfilment of some cost decrease performance indicators imposed by the top management or by the shareholders.

In almost all outsourcing plans, the security of the data should be a concern of the managers in charge with these decisions. Moving of the sensitive data or granting access to this data to an external IT services provider is a delicate decision that might involve a high risk for the organisation. A prior discussion and analysis between the organisation and the future IT services provider might be welcomed before the outsourcing decision.

On the other hand, from IT services provider perspective, the delivery of the IT services to its clients must be performed by respecting a set of best-practice requirements and one of these is the preservation of the security of the clients' data.

The authors of this paper aimed to study the impact of the information security upon the process of delivery of IT managed services from an IT services provider's perspective.

Keywords

Information security, IT service delivery, business continuity, security incident, IT outsourcing, service provider

JEL Classification

M15, O18, L86, O14

Introduction

The provision of outsourced IT managed services to any organisation should not target only the quality aspects of the service delivery but also the security issues involved in the delivery

process due the fact the IT services provider has direct access to its clients' infrastructure and sensitive information. Any IT service provider that has access to the confidential information of its clients should be responsible to protect it from any potential security threat. Taking into consideration the digitalized times we face and the technology advancement, the digitization of business processes turns into a challenge for organizations with regards to data security and confidentiality (Fogoros et al., 2020).

As observed by Kiehne and Olaru (2017) in their study, the 4.0. Industry mostly focuses on technical aspects, such as data protection. Preservation of the security means preservation of several information parameters like confidentiality, integrity, availability (Ionescu et al., 2018) but also of the others, such as: resilience, reliability and non-repudiation. Furthermore, the globalization and the internationalization of businesses made organizations deal with security requirements and local law regulations (Marquardt et al., 2018).

Another possible integration for any service delivery implementation might be with the legal requirements regarding the privacy of the individuals (General Data Protection Regulation applicable starting 2018). If the services of the IT service provider process any personal data of the employees, clients or of the third parties of the provider and/or its clients or suppliers, it is mandatory to apply security measures to protect these personal data (Ionescu et al., 2019). This security environment can be implemented by defining some specific security measures and roles based on the specific risks (Dhillon et al., 2006) identified in the provision of the IT managed services. Beside the hardware and software components involved in the delivery of services, the employees used to manage and deliver the IT services can affect the security overall, due to their intentional or unintentional behaviour which might trigger some incidents (Bauer et al., 2017). Therefore a security awareness programme and a security culture should be developed (Da Veiga et al., 2010) in the organisation of the IT services provider but also in the ones of its clients. Specific security roles should be established in both types of organisations to manage the fulfilment of the security objectives (Ashenden et al., 2013, Hooper et al., 2016). These specific roles should also be involved in the sharing of security advice and troubleshooting (Dang-Pham et al., 2016). These roles from both the IT service provider and its clients, must communicate and report each other the security incidents, when these occur. Beside the security incidents, changes of the context in which the IT services are delivered, occur also every once in a while. Therefore, both the IT service provider and its clients must be engaged, communicate and interact to have an effective information security environment (Bauer et al., 2017). No matter the source, amplitude and negative impact of a change of the context in which the IT services are delivered or of the type of the security incident, the IT service provider should have defined and designed resilience mechanisms of its delivered services and infrastructure to resist and continue to deliver the IT services to its clients according to signed Service Level Agreements (SLAs) (Millar et al., 2018). Each potential failure of an organization should be turned into an innovation tool, not in a hidden loss, keeping in mind the fact that every company is challenging the concept of being good in all fields. Though, we must underline the role of the top management, as being in charge with the communication of the importance of security maintenance on business process and allocation of resources (Ionescu et al., 2019). The research carried out by the authors proposes to study the impact of the information security upon the delivery of the IT managed services by an IT provider to its clients. Integration of security issues into the delivery of IT services raises several problems such as: extra costs that the IT service provider must consider before the delivery of the services, the use of specific competence and infrastructure, process integration know-how and increased complexity of the internal processes used for the delivery of the contracted services.

Research Methodology

The research methodology for this study included two methods. First, a specific literature extensive review, in which the authors studied research articles, legislation, international standards, best practices and studies regarding information security and IT service management system. Second, the performance by the authors of this study of several external audits in four organisations that deliver IT managed services to their customers. The authors checked the level of compliance of these organisations according to the service management system described in the ISO/IEC 20000-1 requirements standard. Three of the studied companies are from Romania and offer their IT services to external clients and the forth is from Germany and offers the IT services internally (the client is internal). The audits have been performed in the period 2010-2019. Among the audited clauses was also the information security ones that have been integrated in their service management system. The authors used audit checklists to investigate the compliance of these companies with their internal rules and procedures developed for the IT service management system. Other investigation methods were the interview of the staff of these companies about the security measures applied in the provision of the IT services to the clients and the analysis of their records and IT systems. By applying these methods, the authors checked the security measures applied for each stage of the service management process (planning and design, development, delivery, maintenance and change/removal of the IT services). The authors compared their results with the requirements of the service management system, which are documented in the procedures of the audited organisations and issued nonconformities and recommendations for the improvement for the service management systems. The results were also used to generate statistics regarding the importance given by the audited companies to the security measures within the service management processes. The analysis of the results of the audits and the literature review were used to study whether the service management process can be improved by integrating with other information security management processes such as risk, change, availability, capacity and communication.

Research Results

Analysis of the specific literature concluded that specific standards and guidelines were issued for the IT service providers, which define the requirements for the service management. The most known references in terms of best practices in IT service management are Information Technology Infrastructure Library (ITIL®), Control Objectives for Information and Related Technology (COBIT®) and ISO/IEC 20000 family of international standards for the service management issued by International Organization for Standardization (ISO). The last version of ISO/IEC 20000-1, which was issued in 2019 is aligned with the Annex SL issued by ISO and facilitates the integration with the ISO/IEC 27001 standard for the information security management system. Therefore the general requirements regarding the information security from the ISO/IEC 20000-1 can be understood and integrated easily with the specific information security requirements from ISO/IEC 27001. Even the scopes of the ITIL, COBIT, ISO/IEC 20000-1, ISO/IEC 27001 are quite different, there are some common aspects in all of the above specifications. A comparison between the common requirements from ISO/IEC 27001 and ISO/IEC 20000-1 with regard to the technical processes is illustrated in the fig.no.1.



Fig. no. 1 Similarities between ISO/IEC 27001 and ISO/IEC 20000-1 technical processes

Source: Authors, 2020

The comparison below excluded the general management clauses from the two standards corresponding to the Plan-Do-Check-Act improvement cycle, which are also common, and focussed more on the technical management processes.

The requirements for the capacity and change management process are very similar, even the scopes of the two international standards are different. ISO/IEC 27001 is focused on the protection of all types of organisations by protecting their sensitive information, while ISO/IEC 20000-1 is addressed only to the services providers and defines the framework, in which their services deliver to the clients at all times by respecting the service level agreements.

A difference between the other common technical processes is for incident, supplier and continuity management. In information security management system, the incident management process is focussed on how to manage a security incident that affects critical assets of the organisation, while in service management system, the incident management process refers how a disruption in the provision of a service is managed for a client. So the purpose of this process is different in the two standards. Supplier management in information security refers to the control of the activities of organisation's suppliers, with the objective to mitigate the possible information security risks, which might appear from this interaction with the supplier's organisation and its staff. In service management system, the supplier management process is focused on the respecting of the engagements taken by supplier, so the service level agreement between the service provider and its clients to be respected in all cases, no matter what happens with the subcontracted processes or the supplier. The continuity process in service management system refers to the continuity of delivery of the contracted services that are under the service level agreements and focus more on accessibility and availability of these services. In information security management system, the continuity process refers not only to the developing of a business continuity plan with various scenarios, but also to keep the critical assets of the organisation safe, even in the event of any business disruption or security incident.

The service management system can be improved as well, if the IT service provider uses the principles from the information security management system. As an example, the risk analysis required by the service management system can be completed with the one from the information security management system.

So, for each IT service, the IT service provider should identify which are the critical information and assets that should be protected. For each item in the risk analysis, the IT service provider should identify possible threats, vulnerabilities, risks and security measures to mitigate these risks. It should be a single integrated risk analysis in which all risks must be managed by an integrated risk management procedure. The usage of a single risk management procedure will assure comparable and reliable results.

As regards the framework of the service management system, ISO/IEC 20000-1 contains most principles of ITIL® and can be used to audit IT service providers and other types of services providers which have their services of delivery based on IT technologies. Following the audits performed, the authors identified several specific information security risks associated with

the IT service delivery processes. Other information security risks, valid in general for all types of organisations, haven't been summarised here.

In table no.1 the authors identified these specific security risks and for each of them, pointed out which attribute of the information security is most probable to be affected in case, that specific risk is not mitigated by the implementation of effective security measures.

Table no. 1 Specific information security risks associated with the processes of IT service management

Type of information security risk	Impact upon information within the delivered IT services
Lack of security requirements in the service design phase	Confidentiality, Availability, Integrity
Lack of the cyber-security attack scenario from the service continuity plan	Availability
Configuration management database does not contain all configuration items used in the delivery of the services	Availability, Integrity
The (new) staff of the IT service provider is not trained regularly with the security procedures	Confidentiality, Availability
Lack of enough human resources (replacements) to manage all the delivered IT services	Availability
The suppliers of the IT provider are not monitored properly as regards the fulfilment of the security rules	Confidentiality, Availability
Poor recording in the Knowledge database of all of the workarounds for the security incidents	Confidentiality, Availability
Lack of recording the customers plans for change as regards the delivered services	Availability, Integrity
Not all security incidents are recorded and investigated by the IT service provider	Confidentiality, Availability, Integrity
Knowledge and/or Configuration database could not be updated every time. Their content is not accurate	Integrity
Lack of testing the releases before their deployment	Confidentiality, Availability, Integrity
The security risks are not considered in the release plans	Confidentiality, Availability, Integrity

Source: Authors, 2020

The identification of the risks above might help the organisations which offer IT managed services to their clients, to identify their security vulnerabilities better and to propose suitable security measures to keep these risks under control.

The list above is not exhaustive and might be improved with other security risks in dependence of the specific context of each IT service provider. Some specific information security issues have been discovered during the audits of the IT service providers.

The authors consider the application of the associated corrections will improve the security of the IT managed services, thus the IT service provider will provide safer services to its clients. Studying the infrastructure and the way the IT service provider manages its delivered services towards its clients has identified the security improvements.

A summary of the identified security improvements is illustrated in fig.no.2.

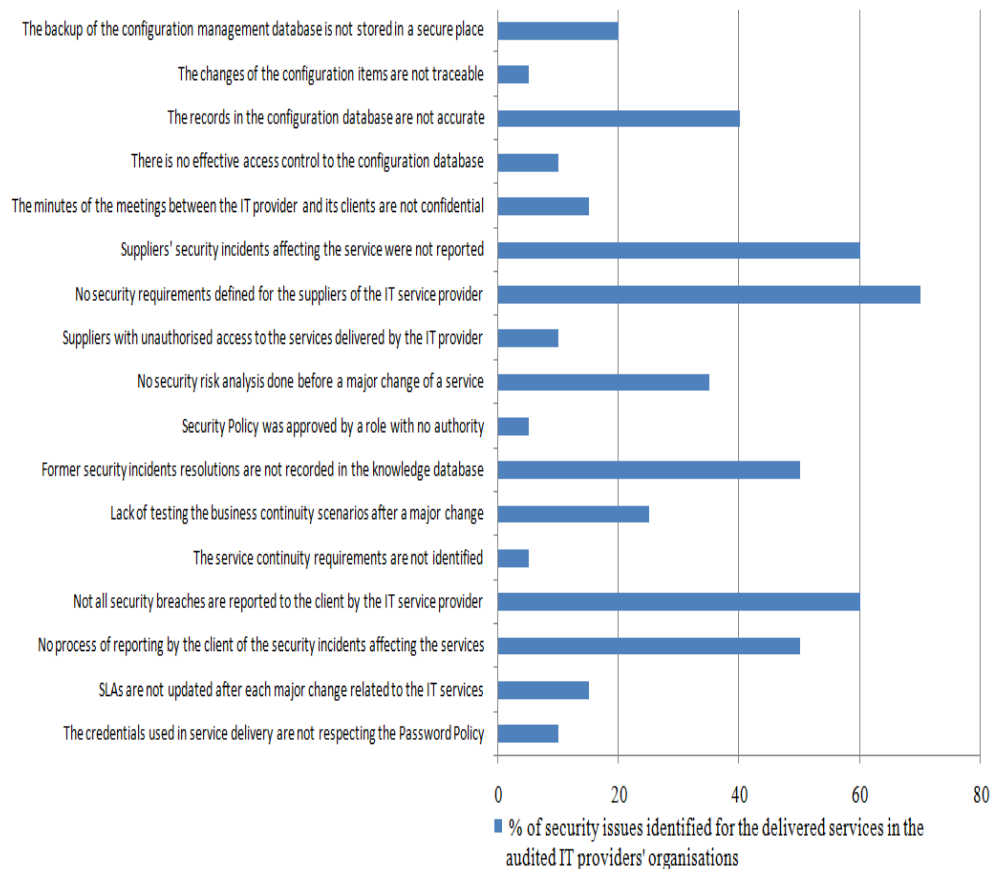


Fig. no. 2 Percents of security issues identified for the delivered services in the audited IT providers' organizations

Source: Authors, 2019

In the chart above, on horizontal axis is illustrated the percent of security issues (out of the total number of 20) discovered by the authors during the performance of the audits in the IT providers organisations. On the vertical axis are documented the specific information security issues identified in managing of the IT services by the IT providers. Centralisation of the results shows the IT service providers were focused mostly on the quality parameters of the delivery of the IT services, as the clients' satisfaction was a top priority in most of the cases. Most of the key performance indicators (KPI) mentioned in the service level agreements, signed between the IT service provider and its clients, were in stronger relationship with the quality aspects rather than with the security of information during the delivered services. This could explain also the lack of attention of the IT service providers to the relationship with their suppliers as regards the information security requirements, especially when they outsourced some processes or part of them, related to their delivered IT services. As it can be seen from the graph above, the IT service providers didn't include proper security requirements in their contracts with the companies to whom they outsourced some parts of the delivered IT services. This created a vulnerability in the organisation of the IT service provider and, in consequence, in the organisations of the clients of the IT service provider. To eliminate this vulnerability, the IT service provider should have defined or transferred the security clauses that it had signed with its clients, to its suppliers and to require them to transfer them in turn, to their sub-suppliers in case they have contact with any components of

the delivered IT service. In this way the IT service provider could mitigate the security risks for the whole suppliers chain. Monitorization of the fulfilment of the imposed security clauses to the suppliers must be performed from time to time, on a regular basis, to assure that they are respected continuously and corrective actions must be applied if any non-fulfilment of contractual requirements is identified during these checks.

Conclusions

The integration of security requirements, based on a risk analysis, in the delivered IT services, starting from the design phase of the service, might constitute a competitive advantage for any IT services provider, when they negotiate their contracts with the future clients. Consideration of security issues should be done starting from the design phase of the IT services to decrease the costs. Focusing on the security aspects as well, not only on the quality of the services (e.g.: fulfilment of the key performance indicators from the service level agreements), could help the IT services providers to avoid security incidents that might put in danger the contractual engagements with the clients. Investment in security might be considered less expensive than payment of penalties due to possible malfunctions of the provided IT services. In some cases, the security component might be understood as a key performance indicator among other quality monitored indicators for the IT service. Thus, it might be inserted in the contractual agreements between the IT service provider and its clients as an obligation for the quality of the services, not only as an option. Customisation of the security level and measures of the delivered IT services should consider aspects such as: critical assets and services to be secured, targets mentioned in the service level agreements between the provider and the client, client's needs, objectives and contractual engagements with its customers, level of integration of IT services in the client's business activities, capacity and competence of the IT service provider to take over some specific tasks, as well as financial aspects which cannot be ignored. Securing all these components is a complex process due to the variety of items, issues and involved objectives. As with some IT service providers, it is possible to deliver services that process personal data of their clients or of the third parties. Therefore, the legal requirements of General Data Protection regulation will apply. In this case, the application of security measures for the delivered IT service is no longer on option but an obligation of the IT provider. The authors of this research conclude not only there is a clear link between the information security and service management, but also that the two concepts can be integrated successfully. If implemented well, the impact of the information security upon service management is a positive one. The adoption of security measures from the design phase of the service, to testing, delivery, maintenance and even removal of service phase, reduces the risk of incidents so the IT service provider will be less financially exposed in front of its clients. Furthermore, the IT service provider might be helped by the adoption of an integrated information security management system at this system is much more detailed with regard the specific security measures than the service management system alone.

Future directions of research regarding the information security implications in the IT service management could comprise the review of other methodologies like CMMI-SVC® and ISO 15504, as these best practices have not been the object of the current study.

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POSSIBILITIES FOR IMPROVING OF SUPPLY CHAIN PERFORMANCE IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Youssef Hassani¹, Gabriela Elena Bițan² and Rodica Ștefănescu (Lupu)³

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

E-mail: hassani.youssri@gmail.com; E-mail: gabriela_bitan@yahoo.com

E-mail: rodica.lupu.office@gmail.com

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Abstract

On estimating dynamic factor demands supported by normalizations and the new economic model imposed by globalization additional costs for research and development have occurred. These additional costs are constantly increasing and present a major challenge for the actors in the supply chain to achieve customer satisfaction. For achieving the objectives, the supply chain is impacted by the reduction of the costs and the productions activities are often restrained to meeting the immediate objectives without any integration with the upstream supply chain. Consequently, if a company wants to maintain balanced sustainable development, a quest towards an efficient supply chain should be based on the purchasing function, with an aim to achieve continuous improvement of margins and regular exchange of knowledge and information with suppliers and actors of the supply chain. This article aims at placing the purchasing functions in the context of the strategic management concerns of the companies, as well as in the operational flows, identifying the stakes of the purchases in the overall performance, and as a result, proposing a model for a sustainable logistic chain management, based on information and management systems external and internal integration.

Keywords

supply chain performance, upstream supply chain, integrated supply chain, procurement and sustainability, integrated management system quality - environment.

JEL Classification

L25, O32

Introduction

Nowadays, the complexity of the business environment in the supply chain operating is characterized by high risk, uncertainty and instability related to products, markets, prices, new

technologies, material availability, diverse cultures and collaborations with different stakeholders with the aim of increasing customer satisfaction (Marquardt et al, 2018). Therefore, ensuring the availability of goods and services necessary for the operation of the business requires an effective upstream chain strategy. The purchasing function is under pressure today more than ever, as it is confronted with constantly anemic growth and with a situation of persistent crisis, associated with more complex market conditions. It must face new economic and operational challenges. Environmental and societal policies reflect a real purchasing challenger and an effective supplier management policy. The concept of responsible purchasing leads to the implementation of new clauses and to the intensification of internal communication. In addition to the identification of needs, purchasing must be done in a preventive manner as far upstream as possible, in order to avoid that the customers' needs arise in inadequate situations, in particular, concerning the suppliers to be retained or consulted. Based on principle that what is not gained in purchases is definitively lost for the company and must be won by the other functions, the purchasing function presents a source of added value and is the cornerstone of the logistics chain optimization. A reduction of the costs at the purchasing level has a significant impact on the whole chain with less energy spent.

Purchasing performance criteria and their impact on the supply chain

In the supplier-buyer relationship, communications can lead to improved supplier confidence. Confidence positively leads to supply chain performance (Giannoccaro et al., 2015) and plays an important role in sharing forecast information (Özalp et al., 2011). The use of information technology and mutual trust are positively linked to the agility, flexibility, adaptability and performance of the supply chain. (Kabra et al., 2016) Several studies have discussed the strategic role of purchasing in the development of the economy (Gordon, 2009). However, suppliers and purchasing contribute to a company's innovation performance (Luzzini et al., 2015). In addition, the purchasing strategy, especially that of critical purchasing, guarantees performance and allows for quality, flexibility and innovation (Luzzini et al., 2012).

The purchasing function is considered by some to be the engine of innovation (Uyarra et al., 2010). Indeed, customer-supplier collaboration is a flagship strategy as, by making the purchasing function mature, interactions are developed from relationships based on transaction processes, to ones based on information sharing and confidence (Hoyt et al., 2000). However, collaboration is considered an engine for efficient and strategic supply in the management of the supply chain (Horvath, 2001). A scientific study has identified a relationship between the different forms of collaboration and improved performance. These performances are measured on cost, quality, flexibility, supply and innovation (Vereecke et al., 2005).

In the figure no.1 it can be seen how continuous improvement of the buyer-supplier relationship allows the improvement of customer satisfaction. For this, adopting a PDCA approach in buyer-supplier relationship management will be profitable for all actors in the supply chain and ultimately, will positively impact customer satisfaction. Advantages have been identified in the continuous improvement process, allowing companies to provide a framework for addressing organizational objectives. The benefits include also, the operator's behavior; while achieving goals by working as a team, sharing knowledge and experience, workers feel they have progressive improvements (Singh, 2015) and optimal continuous performance. The constitution of a homogeneous and multi-disciplinary team turns out to be a key of success for the success of this phase, which can succeed by integrating of all supply chain's actors.

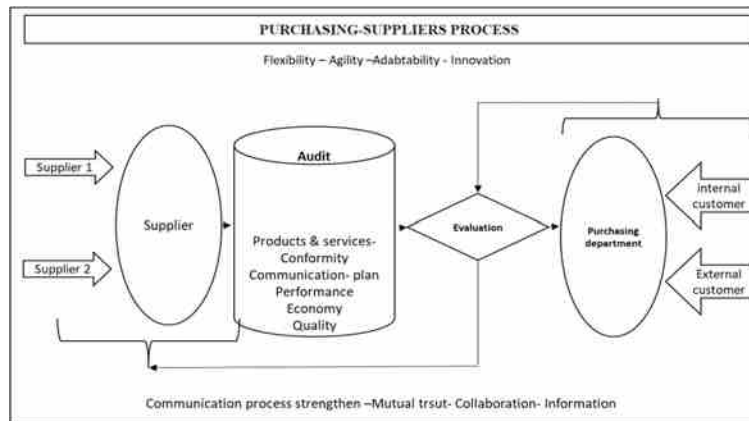


Fig. no. 1 Proposed continuous improvement of the buyer-supplier relationship

Source: Authors' own research

The concept of supply chain integration is a concept widely spoken by developed companies; this concept allows real improvement of management systems due to a more fluid and high level flow of information. Process integration describes the collaborative work between buyers and suppliers and concerns the development of common products and shared information systems. Today, the need for partnerships is increasing; companies tend to outsource many activities for better results. Process integration triggers the need for information transparency, joint strategies and shared visibilities (Christopher et al., 2000). Information sharing is therefore of paramount importance in buyer-supplier relationships; a better understanding of requests can increase supplier performance in terms of quality and compliance and can lead to improved supplier integration. Experts suggest that supplier integration allows for the integration of skills deriving from better coordination of all critical suppliers in the supply chain, in order to reach a set of service capacities. (Bowersox et al, 1999) Companies strive to integrate their supply chains to achieve flexibility and speed (Zhao et al., 2008). Integration is the extent to which the company work together with its partners to reach efficient and effective flows of information, products, decisions, money and valuable information, quickly and at low cost. Other research has been focused on the importance of external integration and internal integration. External and internal integration is important for manufacturers to understand environmental changes and uncertainties and it has an ultimate impact on the flexibility (Flynn et al., 2010). The structure of the internal and external relations of a company will play an important role in order to allow for sufficient sharing of information. Indeed, successful integration of the supply chain allows companies to learn better from past errors and, therefore, they tend to focus more on learning (Spekman et al., 2001). An organization that continuously learns and then processes knowledge about its external environment becomes more agile (van Hoek, 2000).

Information integration means having the ability to use digital technology to share data between buyers and suppliers, effectively creating a virtual supply chain. It focuses on unrestricted access to information and data sharing between suppliers and buyers via the Internet and electronic data exchange (Christopher et al., 2000). The most commonly used system is the Exchange of Computerized Data (EDI). EDI is a language that joins information systems from several organizations with completely separate databases, having an impact on improving the quality of service, in terms of speed, flexibility of delivery. The performance criteria based on the purchasing-supplier relationship strategy is presented in the figure no.2.

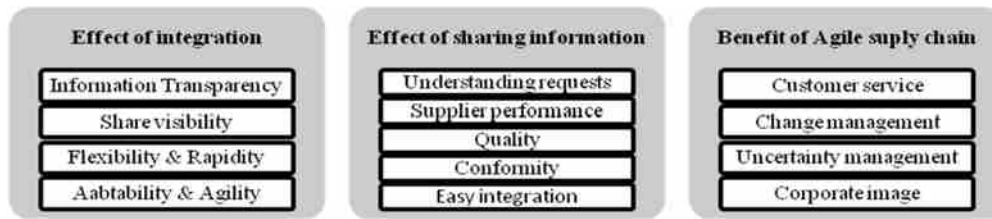


Fig. no. 2 Performance criteria based on the purchasing-supplier relationship strategy

Source: Authors' own research

On the other hand, a relationship is identified between the integrated logistics chain and the agile logistics chain (Tse et al., 2016). The objective of an integrated logistics chain is to maximize customer value by speed, at the lowest cost respecting the physical and information flows (Flynn et al., 2010). Improving reactivity, a major capacity of an agile supply chain will be demonstrated by listing three essential goals within the agile supply chain: enrichment of customer service compared to its competitors, control change and uncertainty thanks to constantly adaptable structures and evaluate the impact of the population on businesses using information technology (Ron et al., 2017).

Procurement and sustainability

Purchasing plays a key role in the supply chain and is the locking point between suppliers and the supply chain, aiming at finding the synergy through the definition of selection criteria and optimization choices. It is therefore a matter of identifying joint solutions for interfaces, with the aim of ensuring continuity and reliability of the flow of goods and services, through purchasing decisions based on pre-selected criteria. While respecting environmental and social requirements in purchasing requests, the pre-selected criteria can be described in terms of deadlines, quality and the most advantageous prices. Indeed, a company is no more sustainable than the suppliers from which it sources (Krause et al., 2009). In order to achieve sustainability, relations must be established only with appropriate partners, this is the means to manage uncertainties and to improve the level of exchange of knowledge and information (Lambert, 2008).

The concept of sustainable supply was discussed in 2002 at the United Nations World Summit on Sustainable Development. Sustainable purchasing follows the same logic. Several studies have analyzed the effect of business-to-business confidence on the environmental management of the supply chain. The concept of sustainability has become essential to help companies achieve their performance goals. Kennard M. (2006) indicates that benefits to an organization in adopting a Sustainable Procurement Policy will be to control costs by adopting a wider approach to whole life costing, improve internal and external standards through performance assessments, to comply with environmental and social legislation, to manage risk and reputation, to build a sustainable supply chain for the future and to involve the local business community. Nevertheless, management systems can be used to achieve sustainability, in particular ISO 9001 and ISO 14001. These two standards can be used jointly in building sustainable organizations (Jorgensen, 2008; Mezinska et al., 2015). Indeed, the new ISO 9001 standard can be considered as a tool that facilitates integration between different management systems while allowing the integration of risks based approach. It gives greater emphasis to the involvement of leadership, as it is easier to be used by service companies and knowledge based organizations (ISO, 2015). According to the report, sustainable development is the ability to meet the needs of the present, without causing damage to future generations. The figure no. 3 represents the context of sustainable performance.

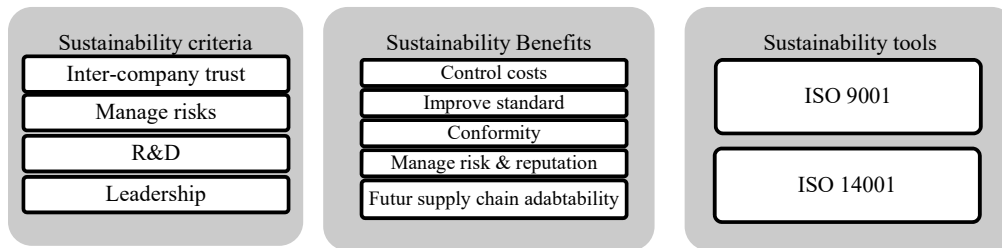


Fig. no. 3 Context of sustainable Performance

Source: Authors' own research

Risk and resilience key factors in selecting suppliers

It is necessary for companies to find an effective management system that allows them to understand risks and minimize their negative impact. The various risks can be increased by the context in which the organization operates. There are three basic sources of strategic risk: operational risk, damage risk to assets and complete risk (Simons, 1999). Competitive risk arises from changes in the competitive environment that can damage a company's ability to create value and differentiate its products and services. This can be seen as a risk of non-compliance with certain requirements of certain standards and represents a major risk to the activity of the company.

At this stage, a supply chain that is still able to survive after a disruption is characterized as resilient (Blackhurst et al., 2011). It is important that companies improve resilience (Hendricks, 2005). Resilience is the capacity for an enterprise to survive, adapt and grow in the face of change and uncertainty (Pettit et al., 2010).

In recent years, due to globalization, the considerable number of companies certified worldwide according to ISO 14001 and ISO 9001 standards has increased significantly in product ranges (Olaru et al., 2013; Maier et al., 2013). The decrease in product life cycles forces advanced companies to be afloat and protect their positions in competitive markets. The companies must benefit from having strong coordination and collaboration with new supply chain partners, allowing them to provide differences from their competitors, in order to increase their competitiveness.

An organization must take into account its context, in particular the aspects and the stakeholders that can impact or be impacted by it. The analysis of this context should enable it to identify what is at stake to successfully develop its product or service. By focusing on the needs of the stakeholders concerned by its challenges, the organizations define a policy, objectives, actions, processes and a management system.

At this stage, the company must take into account all the updated evolutions, the reforms in progress, the methods it can use to avoid unexpected and unwanted changes imposed by external forces. In this perspective, the company should exchange, communicate, collaborate, follow and observe its competitors, suppliers, customers and all stakeholders. The company can therefore define its priorities, strategy, objectives and the structure of the management system accordingly to the requirements, to ensure the conformity of its products and services and improve customer satisfaction. Companies take care to respect internal and external challenges and the products and services they receive. A failure of raw materials, sub-assembly or services with international requirements can constitute a risk of non-compliance of the products and service offered by the company. This constitutes a major risk and an entry barrier for the company on a competitive and increasingly dynamic market, with ever more sensitized and informed customers. The requirements of the standards are clear and it is expected that companies take all the criteria into consideration and implement serious, documented and proven actions to comply.

ISO 19011 (ISO, 2018) provide guidance on the process of conducting quality and environmental management system audits. The standard clarifies “the principles of management system auditing and offers advice on evaluating auditors and assessing their competence, guidance on managing audit programs, and guidance on conducting internal and external audits” (Kraus et al., 2008). The purchasing functions are at the forefront in acquiring the resources necessary for the transformation and development of the global supply chain. They play a key role in increasing the ability to continuously improve by selecting the best suppliers. Purchasing functions have been challenged to manage a certain number of operational risks of supply and supplier dependence, strategic risks linked to awareness of the new technology, politics, legal, ethical, societal and even environmental risks.

Proposed model in the context of sustainable development

Considering the literature review and the experience of the authors, we developed a model for continuous improvement of the integrated supply chain based on performance purchasing-supplier relationship strategy, presented in figure no.4.

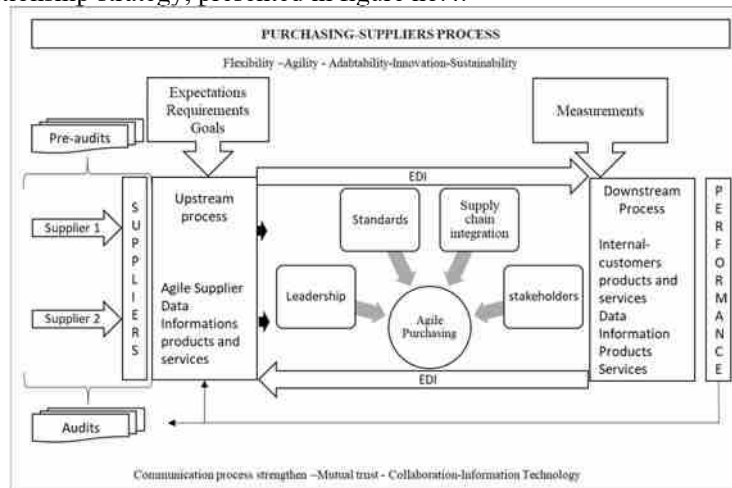


Fig. no. 4 Proposed model for continuous improvement of integrated supply chain based on performance purchasing-supplier relationship strategy

Source: Authors' own research

The overall performance of the company, purchasing and logistics must be understood, linked and sometimes even united in a single global supply function to build coordinated solutions. This model can be applied in any organization and can also be the foundation of other research projects in order to be improved.

Conclusions

Winning on purchases immediately has an impact on the margin which is an important reason for companies to focus their management effort on the logistics chain, in order to develop an adequate policy, mainly when it comes to direct purchases from production; that is to say, purchases go directly into the manufacture of the finished product. Purchasing performance is not achieved merely by negotiating the price at the time of purchasing the product or service. Suppliers must ensure good performance over time, with good annual productivity, which will directly impact the profit margin, as well as the compliance with the requirements of international standards on quality, safety and environment. The company must put in place different means and resources to control, influence and audit the entire acquisition chain from suppliers to final acceptance, in order to ensure the quality and compliance required.

With the increased requirements and global standard, companies must react fast and decisively to adapt and stay on the market. It may be that some companies will have to restructure their strategies and management processes, to join the dynamics of the market. There may be a need to reassess the ability to meet requirements, while updating and continuously improving performance indicators, to ensure the effectiveness, efficiency and agility of its management system.

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AGRICULTURAL MARKET IN THE REPUBLIC OF MOLDOVA. CHALLENGES AND DEVELOPMENT PERSPECTIVES

Mihaela Munteanu Pila¹

¹⁾ „Dunărea de Jos” University of Galați, Romania,

E-mail: mihaela_pila@yahoo.com

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Abstract

The paper presents the results and advantages regarding the development of farming output in the Republic of Moldova, based on regulations of the state, of the internal cereal market, as well as issues related to the extension of inter-farm relations and to the opportune strategies. It has been established that cereals are the most important strategic product that determines the stable operation of the food market and the economic security of the country. The economy of the Republic of Moldova is agro-industrial, due to the favourable climatic conditions in the Republic of Moldova, and they can cultivate attractive surfaces there, but funds are needed for both production and market entry. The performance indicators of the economic entities in the farming field (cereal crops) include a wide range of organisational, economic, technical, technological and other types of factors which, acting in combination, determine the reaching of certain positive results, representing an essential element on the cereal market – the country’s development factor.

Keywords

agriculture, farming, crops, development, opportunity.

JEL Classification

Q13, Q 18

Introduction

The Republic of Moldova has always been and still is a country recognised for its fertile land and agriculture, the backbone of the national economy. The chernozems in the Republic of Moldova are among the most fertile soils in the world. The arable land constitutes about 74% of the total area of farming land of the country, with an area of 3,384.6 thousand ha, the highest percentage in the European countries.

The cereal crops constitute the basis of all agricultural output. The development of all other branches of agriculture largely depends on the level of agricultural development. Growing cereals is the basis of all agricultural output. Which is determined by the different links of

cereal production with the adjacent ones. Thousands of years of practice show that without the output developed by cereals, it is impossible to specialise the economic regions for the production of animal products, the development of the production of industrial crops and other farming sectors. Cereals are an important source of raw materials for animal feed, for the beer and spirits production, and for the future biofuels industry. The cereals exhibit, from an economic point of view, a series of advantages: they can be kept in good conditions in dry form and are easily transported over long distances, grace to their high degree of fluidity. Cereals are important in terms of food and energy value, it should be noted that today the world population is rapidly growing, which leads to a significant increase in food consumption. Cereals and processed products are the main food products worldwide, being a constant and ubiquitous source of protein needed for human life. At the same time, due to various factors around the world, there is a reduction of land suitable for crop cultivation, which triggers a lack of food for both humans and animals. Given the vastness and complexity of the economic relations elements, the cereal market can serve as a unique development model for other markets of agricultural products, raw materials and food.

Short literature review

Determining the role in the world economic system, as well as the development prospects, is impossible without an analysis of the problems related to the development of the world market, as well as of its development trends. Nowadays, the global cereal market is changing significantly, for instance, in 2011–2012, the USA, Russia and Australia became the largest cereal exporters on the world market, while a few years ago, the market was completely controlled by five exporting countries: the USA, Canada, Australia, Argentina and the EU (Nazarova, 2013). Between 2000–2011, the GDP of the Republic of Moldova increased on the average by 6% per year. In 2011, as a result of the real appreciation of the national currency, (the Moldovan leu), the GDP per capita increased from US \$ 354 to US \$ 3400. In 2011, agriculture and the agri-food industry accounted for about 36% of the GDP, and provided about 41% of the country's exports. In 2011, the farming output amounted to about 1.4 billion euros (in current prices) - a 4.6% increase compared to 2010 (FAO, 2012). The natural advantages, including the aquatic resources, can be successful factors for the food production of the Republic of Moldova (Munteanu Pila and Stanciu, 2018).

Therefore, in order to maintain agricultural stability, one should create the conditions for the formation of efficient and complex mechanisms, the development of restructuring methods and models for cereal growth, factor necessary for the development of agricultural enterprises, improvement of production technology, organization of workforce and management, increase of logistical level (Koşelov and Cervonâh, 2016). Munteanu Pila and Stanciu (2019) made a comparative analysis of Romania and the Republic of Moldova from the perspective of the main food security indicators. Specific data, as food production and consumption, natural resources, demographic changes, consumer habits, dependence of the domestic import market in the two neighbouring countries were considered. Although there are important differences between the two countries in providing food for the population, there are also common issues specific to food security. Florea, Munteanu Pila, Stanciu et al. (2019), showed that the association of agricultural producers can be a solution to increase yields in agriculture. Romanian agricultural cooperatives can be a business model for Moldovan farmers.

Material and method

The information about the farming crops in the Republic of Moldova and the prospects for the development of the sector were obtained from the official sources of the National Bureau of Statistics of the Republic of Moldova. The data on the world market, as well as its development trends, were collected from specialised publications. The data regarding the legal regulations of the cereal market in the Republic of Moldova were collected from the

relevant decrees ruled by the Government of the Republic of Moldova, (Law no. 455 of 21.06.2017). The data collected were sorted and statistically processed. The results obtained were compared to other literature data for a proper interpretation.

Results and discussions

The cereal market in the Republic of Moldova compared to other countries is still in the developing stage due to its economic characteristics and differs significantly from the characteristics of the cereal markets in the countries with developed market economies. The cereal market in the Republic of Moldova is still unstable in terms of its capacity to meet the wheat demand for the region on the national level; at the same time, it is a complex multifunctional and dynamic system, which includes a wide range of national economic functions, as cereal growing requires from the state the utmost attention when it comes to development, in order to conquer with internal products both the domestic market and the international markets through export, but it is necessary to solve a series of internal problems that impede the stable development of the economic sector. The main producers of cereal crops in the Republic of Moldova are farming enterprises with different forms of management, of which 73.8% are private farming holdings and 26.2% are state farms. The private agricultural holdings produce almost 92% of the country's total gross cereal crops and the state-owned ones grow about 8% of the cereal crops. A diagram comprising the composition of the cereal producers' market in the Republic of Moldova is shown in (fig. no. 1).

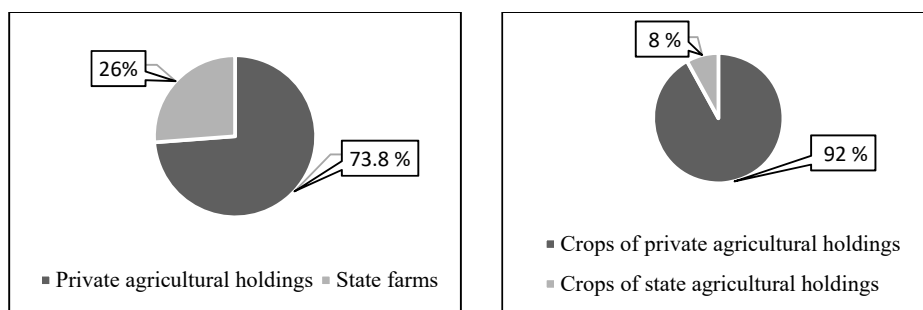


Fig. no. 1 Structure of cereal market in the Republic of Moldova

Source: Author, by using FAO, 2012

Among the producers of cereals, privately-owned enterprises are predominant (partnerships, joint stock companies, agricultural cooperatives, farms with collective shares). In the Republic of Moldova there are about 73.8% of such enterprises. Small good-producing enterprises based on private property are represented on the cereal market by peasants' farms. The choice of various forms of ownership and management is largely due to regional conditions. Whereas in the 1990s (in state-owned farms) more attention was paid to farms' development, today the process of organising farms has slowed down due to the poor financial support and material and technical base, and some farmers have abandoned the plots of land allotted.

The condition of agricultural farms is characterised by the size of the sown areas, the gross harvest of cereals and the structural changes in the production of certain types of products. The Republic of Moldova has 3.38 million hectares, of which 2.48 million ha of farmlands, 1.82 million ha of arable lands and 0.3 million ha of multiannual plantations (fig. no. 2).

The decrease of the gross crop of cereals in the Republic of Moldova and the insufficiency of the supply of basic food products for the population, in the context of transition to market

relations, have led to significant purchases of food and cereals (for humans as well as for livestock) from abroad, in the form of imports.

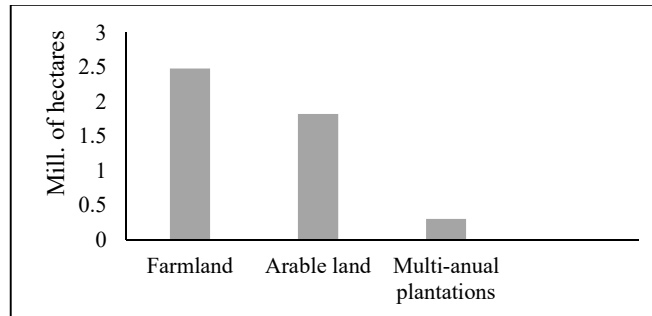


Fig. no. 2 Agricultural areas in Moldova (ha)

Source: Author, by using FAO, 2012

According to the statistical data of the National Bureau of Statistics, the agricultural production in 2019 showed a slight decrease being 98.1% compared to 2018 (103.8). Figure 3 shows that the gross cereal crops have significantly varied over the years, which is to some extent related to the natural and climatic conditions of cereal output, as well as the deficiencies in the organisation of the supply of material and technical resources to farms, especially of mineral fertilizers (fig. no. 3).

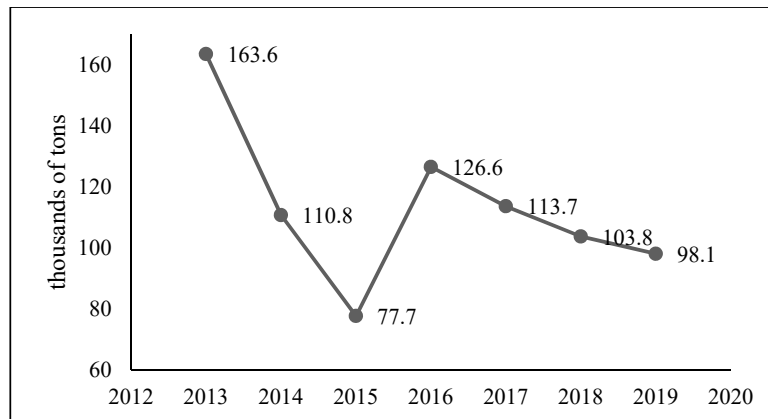


Fig. no. 3 Farming crops in the Republic of Moldova

Source: Author, by using National Bureau of Statistics, 2019

Thus, the average gross crops of cereals and vegetables in the period 2013-2019 exhibited upward and downward fluctuations of the agricultural output (in tons), in 2015 it decreased to 85.9 thousand tons, in 2016 the crop increased by 48.9 tons, and then it dropped again, so that in 2019 the farming output represented only 98.1%. The lowest cereal crops in the last 5 years due to the drought were harvested in 2015, and the richest year for crops was 2013. All the plantations of cereals and vegetables in the Republic of Moldova are classified into plantations for food and for fodder. In the composition of food crops, we speak of wheat and rye (for bread) and cereals (buckwheat, millet, rice). In the structure of sown areas in cereal crops, the largest surface is occupied by corn, winter and spring wheat. They represent almost

half of all cereal crops. The wheat-growing surface in 2019 compared to 2017 increased by 0.2% (table. no. 1).

Table. no. 1 Farming crops by categories

Farming crops	2017	2018	2019
Cereals (grains)	35.9	35.8	37.4
Wheat	37.3	31.3	37.5
Corn	37.0	42.4	43.1

Source: Author, by using National Bureau of Statistics, 2019

This is due to the fact that this crop is characterised by high nutritional properties, good digestibility and is widely used in the preparation of bread products. Among fodder crops, the largest areas are reserved to corn. The cereal crops occupy significant areas in the Moldovan farms. A very important factor for the economy of the Republic of Moldova is the reduction of cereals' prices by the producers, which determines a sufficient output for the whole country. In 2018, the price of grain cereals decreased by an average of 10.7%. Essentially, prices decreased for sunflower (excluding soybeans) by 21.1%, for cereals and grain vegetables by 10.3% (of which the price of rye by 38.5%, of vegetables by 24, 4%, of barley by 18.4%, of corn by 12.1%, of wheat by 4.6%. At the same time, the sale prices for fruits and berries increased by 54.5%, for vegetables by 41, 7%, for potatoes by 6.7% (fig.no.4).

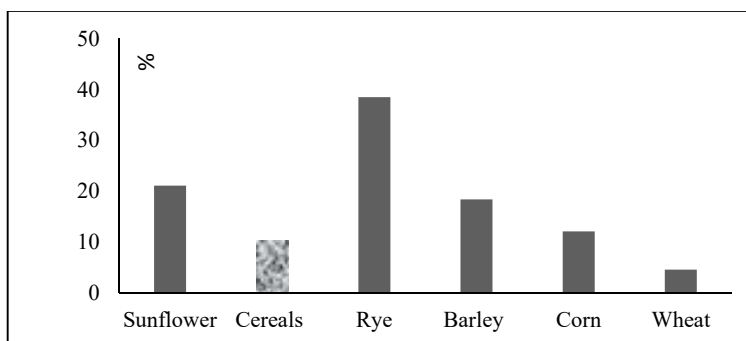


Fig. no. 4 Falling prices for agricultural products in Moldova – averages values (%)

Source: Author, by using National Bureau of Statistics, 2019

A feature of the legislative regulation for the cereal market in the Republic of Moldova is the presence of state procurement institutions and commodity interventions, and the afferent procedures are set in the relevant decrees of the Government of the Republic of Moldova, as well as the legislative consolidation of the state support for cereal production and processing under the form of compensations for cereal producers, and for the expenses incurred by them. The most significant conditions regarding the state's influence on the market in question are represented by the support for agricultural producers, the purchase of cereals for the needs of the state, the formation of market relations *in situ*.

Conclusions

The climatic conditions and the high soil fertility in the Republic of Moldova are suitable for growing most farming plantations (fruits, vegetables, cereals and oilseeds). The cereal market in the Republic of Moldova has several problems, but they are all solvable. One of the most

important tasks should be to solve the issue of marketing and risk insurance for the participants on the domestic cereal market. This is of paramount importance, given that the very problems of sale and insurance risks are extremely acute for the country's farmers. The dynamics of prices for agricultural products is usually formed under the influence of changes in balances at the end of the farming year (irrespective if it was a rich year or not). The Republic of Moldova has favourable conditions for growing a wide range of cereals. The geographical proximity to the EU market can provide opportunities in this sector. During the development period, the producers of cereals from all regions of the Republic of Moldova must be protected against the rise of prices for material and technical resources; services of industries and service-providing organisations; increase of quarterly taxation level for loans, and price growth, granting them a guaranteed profitability level for their cereal crops.

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SENIOR ENTREPRENEURSHIP IN ROMANIA: A QUANTITATIVE APPROACH

Raluca Mariana Grosu¹ and Mariana Drăgușin²

^{1) 2)} *The Bucharest University of Economic Studies*

E-mail: raluca.petrescu@com.ase.ro; E-mail: mariana.dragusin@com.ase.ro

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Abstract

In an aging society, senior entrepreneurship has the potential to represent an important source for value, wealth and well-being creation for both seniors and the society. As a viable mechanism for social inclusion and economic development, senior entrepreneurship, might bring important benefits at individual, regional and national levels. On one hand, by employing their know-how, experience, human and social capital, senior entrepreneurs are contributing to strengthening the whole economy by creating jobs for other seniors and/or their younger counterparts. They are also lowering the demand for social services, are contributing to social public funds through the taxes they pay. On the other hand, senior entrepreneurs might tend to become happier and live longer more productive and meaningful lives. Also, they have higher chances to increase their degrees of self-esteem, self-confidence and independence, to enhance their vitality and to improve their overall health. In the context of extremely scarce literature on the topic, this paper, seeks to contribute to a better understanding of the Romanian senior entrepreneurship emerging phenomenon, by outlining relevant aspects of its current amplitude. It briefly examines its theoretical background and research perspectives in Romania. The main component of the paper is focused on a quantitative approach, as an in depth statistical analysis of regional data on Romanian senior entrepreneurs' newly created companies, during the 2001-2017 period, based on recent data provided by the National Institute of Statistics. Relevant, further research topics are identified by the authors.

Keywords

Senior entrepreneurship, longevity economy, silver economy, Romania, quantitative approach

JEL Classification

J10, M20, O10

Introduction

Aging population represents an important challenge that countries all over the world are facing. The number of persons aged 50 and over is estimated to double its 2015 value (1.6

billion) by 2050 (Oxford Economics, 2016). Various concepts, such as longevity/silver economy have emerged, reflecting the complexity of the phenomenon. If in the United States (U.S.) the phrase ‘longevity economy’ is defined by “the sum of all the economic activity serving the needs of Americans aged 50 and over and including both the products and services they purchase directly and the further economic activity this spending generates” (Oxford Economics, 2013, p.4), in Europe the term of ‘silver economy’ has a similar meaning: “the economic opportunities arising from the public and consumer expenditure related to population ageing and the specific needs of the population over 50” (European Commission, 2015a, p.1). This type of economy, related to seniors, is considered the 3rd largest in the world, reaching a value of over 7 trillion \$ per year (European Commission, 2015a, p.4), outlining its increasing importance.

Within a Europe that is “turning increasingly grey in the coming decades” (European Commission, 2015b, p.21), Romania is facing strong social and economic challenges, not only because of the aging trend, but also because of the heavy migration of its active population, increasing life expectancy, lower mortality rates, and falling fertility rates (Dragusin et al., 2015a). According to the National Institute of Statistics (2019a), in 2019, the number of Romanians aged 50 and over, reached over 7.4 million representing 38.18% out of the total population. And this share is expected to increase in the future.

In this landscape, senior entrepreneurship, referring to “people aged 50 or over, who are planning to start a business, are currently in the process of starting one, or have recently started one” (OECD, 2013, p. 1) has the potential to represent a viable mechanism for value, wealth and well-being creation for both seniors and their community, especially through job generation, workforce development, and improved productivity. Furthermore, seniors who develop their own ventures are lowering the demand on social services, and even contribute to social security and medical services through the taxes they pay. Entrepreneurship is an adequate option for an “Active Ageing” and better social inclusion. Through involvement in entrepreneurial activities, usually, seniors increase their levels of self-esteem, self-confidence and independence. Entrepreneurship may support positive self-perception and may even help enhance vitality and improve overall health (physically, mentally and emotionally), as active seniors tend to be happier and live longer (American Psychological Association, 2014); senior entrepreneurs tend to live a more productive and meaningful life.

Even if, according to a Special Topic Report on Senior Entrepreneurship of the Global Entrepreneurship Monitor (Schøtt et al., 2017), seniors (50-64 years old) and older individuals (65-80 years old) usually show significantly lower levels of entrepreneurial intention compared to young adults (18-29 years old) and mid-aged adults (30-49 years old), there are various key facts that support the potential of this phenomenon, especially in the U.S.. For example, “older adults are a growing segment of the U.S. entrepreneurial population. Individuals aged 55 to 64 have gone from making up 14.8% of new entrepreneurs in 1996 to 25.5% of all new entrepreneurs in 2016.” (Ewing Marion Kauffman Foundation, 2017)

Europe is also starting to acknowledge the rising importance of the phenomenon. “Between 1990 and 2010, the share of citizens aged over 50 has increased from 32.1% to 36.5%, and the median age of the European population is expected to rise for the coming decades, making seniors a valuable resource for entrepreneurship. Furthermore, a growing cohort of well educated, highly experienced adults is retiring every year and to date society has not been innovative in occupying them and benefiting from their know-how and skills. Engaging them in both business creation and in supporting new and existing entrepreneurs would maximize the wealth of experience they possess that can be lost on retirement, cultivate intergenerational learning and ensure knowledge transfer.” (European Commission, 2013) Senior entrepreneurship is promoted as a key to economic recovery in the European Union (E.U.) 2020 strategy, valuable efforts being oriented towards a proper development of the phenomenon. For example, the Good Practices Manual outlines pioneering, successful and

important initiatives regarding senior entrepreneurship, focusing on: education/training on entrepreneurial skills; individual mentoring of seniors; development of networks of seniors/projects/ institutions; research (European Commission, 2016 cited in Dragusin et al., 2017). Such initiatives are mainly found in countries like Belgium, France, Germany, Ireland, Portugal, Slovakia, Slovenia, Spain, and the United Kingdom. On the opposite side, Romania, as another former communist country in the Eastern Europe, tends to have lower senior inclusiveness compared to the previously mentioned countries (Pilkova et al, 2014) and lower percentages of seniors involved in entrepreneurial activities. “Seniors’ formal education was completed during the former centralized regime with no entrepreneurship component, thus negatively impacting their entrepreneurial mindset and propensity to engage in entrepreneurial activity” (Dragusin et al., 2017, p.221). In Romania, low pension levels emphasized by weak social interactions after retirement led to the development of a very vulnerable group - the one of retirees - characterized by words like ‘usefulness’, ‘decrepitude’, ‘poverty’, ‘loneliness’, ‘marginalization’, ‘disease’ etc. Usually, near the age of 50, many Romanians are starting to feel dejected and to timorously think at the next stage of their life. Senior entrepreneurship has the potential to change this attitude and mindset and to empower Romanian seniors. Besides fostering self-esteem and self-confidence, and generating extra income, wealth, and well-being amid Romanian seniors, entrepreneurship may bring a valuable contribution to the country’s economic development, through job generation, taxes paid and improved productivity.

In such a context, through the present paper, we aim at outlining a quantitative image of the senior entrepreneurship phenomenon in Romania, focusing on an in-depth analysis of the most recent data provided by the National Institute of Statistics (2019b). We have structured our paper into four main parts, this introductory section included. The next part of the paper briefly reviews main studies in the area of senior entrepreneurship, with accent on Romania as a study area, while the third one puts forward the statistical analysis of the phenomenon in Romania. The paper ends up with final considerations and recommendations for further relevant studies.

Senior entrepreneurship. A brief literature review focusing on the Romanian case

Despite its positive impact on economic development and on seniors’ well-being, wealth, and health, senior entrepreneurship is a relatively new and understudied subject. Very recent literature, albeit quite scarce, is focused mainly on the U.S., Australia and the E.U. and it is primarily composed of studies and reports carried out by institutions. However, even if in an incipient stage, the publishing of articles in peer reviewed journals (Isele and Rogoff, 2014; Maritz, 2015; Cervený, Pilkova and Rehak, 2016; Pilkova and Rehak, 2017) or of books (probably, the most representative in the area, Backman, Karlsson and Kekezi, 2019) on this topic is flourishing.

In what concerns Romania as an area of study, the first research paper to address the issue of longevity/silver economy and senior entrepreneurship was the one developed by Dragusin et al. (2017), which contributed to creating awareness about elderly untapped potential and new knowledge about the topic. Specific features of senior entrepreneurship in the context of the Romanian longevity/silver economy were investigated by Dragusin et al. (2019). A daring approach to Romania’s ageing population, focusing on generated opportunities and challenges it poses can be found in Welsh, Dragusin and Grosu (2019).

Previous pieces of research that mainly explore a new emergent field of study associated to the ‘longevity/silver economy’, quasi unknown in Romania, include the work of Dragusin et al. (2015a, b). These mainly address the challenges of an aging population, focusing on the case of Romanian retirees, indirectly tackling the idea of senior entrepreneurship as a viable way for seniors to stay active and to improve their socio-economic condition.

Senior entrepreneurship in Romania. A statistical perspective

This section of the paper outlines a quantitative image of the senior entrepreneurship phenomenon in Romania during the 2001-2017 period, considering only newly created companies. Based on data provided by the National Institute of Statistics (2019b), tables no. 1a and 1b outline a clear image of the distribution of newly created active companies taking into consideration the age of their founder, at both national and regional level. Data result from a complex survey-based research developed by the National Institute of Statistics on a yearly basis. Its main goal is to provide, in an accurate and reliable manner, the necessary information to characterize the enterprises and to design a profile of the Romanian senior entrepreneur (National Institute of Statistics, 2019b). Approximately 5.000 newly created companies were investigated, with the main limitation that the research is representative only at regional level. Therefore, our analysis too reflects the same level. The latest updates, recorded on December 2019, reflect 2017 as the most recent year for which data is available, with 2001 being the first. We have chosen for analysis the entire period with representative data at regional level, respectively 2001-2017. It is important to mention that, in its research, the National Institute of Statistics considered ‘companies’ in a wider, more comprehensive way, by including enterprises and individual entrepreneurs (physical/natural persons, individual enterprises, family enterprises and liberal professions) that develop economic, non-agricultural activities. Furthermore, the only economically active enterprises taken into consideration are those that register any turnover and/or employment in the analysed period. The syntagma - ‘newly created’- refers to the “inclusion of a company in the statistical register of companies that is updated on a monthly basis, based on the fiscal registry”. (National Institute of Statistics, 2019b)

Table no. 1a Distribution of newly created active companies considering founder’s age, at national and regional level (%) – period 2001-2009

Age		2001	2002	2003	2004	2005	2006	2007	2008	2009
< 50	Total - national	84.1	85.6	84.3	87.9	88.2	84.2	80.6	85.6	84.5
	North-East Region	83.3	82.6	85.7	85.4	91.4	88.2	77.1	82.9	90.4
	South-Muntenia Region	83.1	80.2	84.4	88	95.7	85.8	82	85.4	78.7
	South-West Oltenia Region	79.9	82.7	80.7	89.7	97.8	85.3	74.4	87	81.6
	North-West Region	78.2	78.4	91.8	89.5	85.1	87.9	84.9	89.8	86.4
	West Region	80.1	89.7	83.8	88.9	85.4	83.7	83.6	85.9	83.5
	South-East Region	77.3	81.1	76.4	84.2	94.6	85.1	76.2	84.7	82.6
	Centre Region	79.2	84.4	84.3	89.1	41.5	85.6	85.8	82.8	81.7
	Bucharest-Ilfov Region	80	70.9	85.3	88.3	94.7	78.5	79.5	84.9	86.9
≥50	Total - national	15.9	14.5	15.7	12.1	11.8	15.8	19.4	14.4	15.5
	North-East Region	16.7	17.4	14.3	14.6	8.7	11.8	22.9	17.1	9.6
	South-Muntenia Region	16.9	19.8	15.6	12	4.4	14.3	18	14.6	21.3
	South-West Oltenia Region	20.1	17.3	19.3	10.3	2.2	14.6	25.6	13	18.4
	North-West Region	21.8	21.6	8.2	10.5	15	12.2	15.1	10.2	13.6
	West Region	19.9	10.3	16.2	11.1	14.4	16.2	16.4	14.1	16.5

	South-East Region	22.7	18.9	23.6	15.8	5.5	14.8	23.7	15.3	17.4
	Centre Region	20.8	15.6	15.7	10.9	58.6	14.4	14.2	17.2	18.3
	Bucharest-Ilfov Region	20	29.1	14.7	11.7	5.3	21.6	20.5	15.1	13.1

Source: own development based on data from the National Institute of Statistics, 2019b

Table no. 1b Distribution of newly created active companies considering founder's age, at national and regional level (%) – period 2010-2017

Age		2010	2011	2012	2013	2014	2015	2016	2017
< 50	Total - national	83.2	83.2	82.2	83.9	86.8	88.3	84.5	88.3
	North-East Region	84.8	85.5	86.2	82.8	83.1	90.7	85.2	87
	South-Muntenia Region	81.8	80.3	82.1	81.3	91.7	79.2	87.5	84.7
	South-West Oltenia Region	81.9	79.9	83.1	78.8	95.7	88.4	83.1	91.8
	North-West Region	84	85.4	88.2	85.5	82.6	92.3	83.4	90.3
	West Region	81.2	82.2	79.3	84.2	86.3	80.2	82.9	92
	South-East Region	82.9	88.9	81.1	83.5	80.3	90.5	87.7	84.9
	Centre Region	83.1	82.4	85.1	88.6	85.5	89.4	83.3	91.7
	Bucharest-Ilfov Region	84.6	80.3	74.1	85.5	91.5	91.6	83	80.1
≥50	Total - national	16.8	16.8	17.8	16.1	13.2	11.7	15.5	11.7
	North-East Region	15.2	14.5	13.9	17.2	16.9	9.3	14.8	13
	South-Muntenia Region	18.2	19.7	17.8	18.7	8.3	20.8	12.5	15.3
	South-West Oltenia Region	18.1	20.1	17	21.2	4.3	11.6	16.9	8.2
	North-West Region	16	14.6	11.8	14.5	17.4	7.7	16.6	9.7
	West Region	18.8	17.8	20.8	15.8	13.7	19.8	17.1	8
	South-East Region	17.1	11.1	18.9	16.5	19.7	9.5	12.3	15.1
	Centre Region	16.9	17.6	14.9	11.4	14.5	10.6	16.7	8.3
	Bucharest-Ilfov Region	15.4	19.7	25.9	14.5	8.5	8.4	17	19.9

Source: own development based on data from the National Institute of Statistics, 2019b

According to the information in the above tables (no. 1a and 1b), the shares of senior entrepreneurs of newly created companies had widely fluctuated during the analysed period at both national and regional levels: between 11.7 % (2015, 2017) and 19.4% (2007), respectively 2.2 and 29%. However, 2005 appears to be the year with the lowest share of senior entrepreneurs starting new firms in the analysed period, except the Centre Region. The latest registers the highest share - 58.6%, in the entire analysed period, among all regions.

This aspect might be, somehow, correlated with the fact that, starting with 2005, in less developed regions, the administrations were offered the possibility to provide financial aid, in order to cover running expenses of Small and Medium Sized Enterprises (SMEs), during their first five years of activity. Furthermore, in 2005 the European Commission developed various measures aiming at simplifying the regulatory framework associated to the SMEs sector. (Comisia Europeana, 2008)

The Southern part of Romania (the South-East, South-Muntenia and South-West Oltenia Regions) is very often in top three regions with the highest shares of senior entrepreneurs running newly created companies in the analysed period. At the opposite side, the Northern part of Romania (the North-West and North-East Regions) usually appears in the category of the lowest shares of senior entrepreneurs. A high share of senior entrepreneurs in the South-Muntenia Region might be due to the fact that this region is the one that hosts the highest share of seniors in Romania. Surprisingly, the second most populated region with seniors in Romania is the North East Region. However, this is not amid the ones with the highest shares of senior entrepreneurs, but amid the ones with the lowest shares. This might be due the fact that the region is one of the least developed, especially from an economic perspective, usually found in the lagging behind regions category. Surprisingly, the North-West Region, which might be considered the second most developed region in Romania, especially from an economic point of view, with the highest share of enterprises in Romania, after the Bucharest-Ilfov region (the capital city region), is amid the regions that register the lowest shares of senior entrepreneurs running newly created companies. As the North-West Region is highly recognized in Europe for its Information Technology industry (its most representative city, Cluj-Napoca is commonly known as Romania's/Eastern Europe's Silicon Valley), this might not be so appealing to senior entrepreneurs, compared to their younger counterparts.

Conclusions

In the last decades, society has undergone changes of unprecedented dimensions, imposing a great degree of adaptability and flexibility, leading in the same time to the emergence of innovative actions. There is a growing demographic segment of healthy elderly with valuable skills, financial resources and time available, able to provide a notable contribution to the economic development of the country. Thus, maybe, one of the most effective responses lays in senior entrepreneurship, that has the potential to strengthen economic capacity through the founded by seniors businesses. This might be a viable mechanism for seniors' social and economic inclusion, for their well-being too.

Romania, as one of the former communist country, tend to have lower social and economic inclusiveness of seniors, implicitly lower involvement of seniors in entrepreneurial activities, compared to the one in more developed countries such as the U.S., or, in Europe: Belgium, France, Germany, Ireland, Portugal, Slovakia, Slovenia, Spain, and the United Kingdom. Our quantitative analysis has highlighted an emerging, under-researched senior entrepreneurship phenomenon, at both national and regional levels, at least from the perspective of newly created companies by senior entrepreneurs, during 2001-2017 time span.

However, considering an adequate development of the silver/longevity economy in Romania, in compliance with a coherent strategy for smart, sustainable and inclusive growth a great focusing on empowering seniors through entrepreneurship should be a priority. Seniors from a former centralized economy should embrace and develop an entrepreneurial mindset and follow the entrepreneurial path. In Romania, seniors need to feel empowered through entrepreneurship, in order to ensure a better life, from social, financial, economic, health, etc. perspectives. Entrepreneurship initiatives should reach seniors in Romania and should help them capitalize and maximize their experience acquired over time in order to generate wealth and well-being for themselves, for future generations, and for their community. Furthermore, through exploring the untapped potential of senior entrepreneurs, Romania will face economic

development and growth, especially through creating and driving new economic markets and jobs, through workforce development, and improved productivity. However, these initiatives, along with the whole development trajectory of the silver/longevity economy in Romania and the development of the senior entrepreneurship phenomenon should be further studied in the near future taking into account the actual crisis – at various levels such as health, economic, social, etc. – generated by the coronavirus outbreak. This challenging pandemic definitely impacted not only the dimension/number of seniors/aged persons, but also their social and economic status. In such a context, the influence of various personal and social aspects on the entrepreneurial behaviour of seniors are worth exploring, especially when regarding the great importance of personal values as predictors of entrepreneurial attitude.

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TOWARDS A ROMANIA WITH LOW CARBON EMISSIONS

George Marian Călin¹ and Andreea Antoneac (Lungu)²

^{1) 2)} The Bucharest University of Economic Studies, Romania

E-mail: calingearge18@yahoo.com; E-mail: andreea.antoneac@gmail.com

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Abstract

Since we find ourselves near the end of the deadline set for the fulfilment of the targets established for all Member States of the European Union (EU), in the context of the Europe 2020 Strategy, we intend to analyse the current degree of achievement of targets set by Romania in the field of climate change and energy. Of the 11 thematic objectives of the cohesion policy, destined for growth in the 2014-2020 programming period, the thematic objective no. 4 (OT 4) is intended to support the transition to a low-carbon economy, an objective aimed at achieving the "20/20/20" objective in the field of climate change and energy, of the Europe 2020 Strategy. Thus, in this article we will try to analyse the state of Romania, regarding the implementation of European funded projects with the main objective of contributing to the reduction of carbon emissions, starting from the operational programs that contribute, through their established investment priorities, to the achievement of this objective.

Keywords

operational programs, cohesion policy, thematic objective, projects

JEL Classification

F36, O19, O22, O52, Q39

Introduction

Like Cristea et al., 2016, said in their conclusions, that any economic and social policy must be adapted to the specificities of each country, in order to achieve the common objectives set by the European Commission through the Europe 2020 Strategy, each Member State had to adapt its final set of national targets in line with the European ones. Choosing objectives and measures, designing programmes and policies, implementing and sustaining a dynamic development, all require analysis, anticipation, establishing feedback systems and mobilising different institutions, agencies and population groups. (Dobrotă and Vasilca, 2015). Thus, for Romania, the National Reform Program (NRP) represents the framework platform for defining the structural reforms and development priorities that guide Romania's evolution

until 2020, in accordance with the trajectory towards achieving the Europe 2020 Strategy objectives. Basically, NRP is the obligation of each EU Member State to translate the Europe 2020 objectives at national level.

In July 2010, the Romanian Government approved through memorandum the set of final values of the national targets reflected in the NRP, in accordance with the European targets established with the adoption of the Europe 2020 Strategy, taking into account the financial commitments already made and the national specific. Thus, in order to implement the Europe 2020 Strategy at EU level, Romania has assumed, at national level, the following targets for 2020:

- the employment rate of the population between the ages of 20 and 64 - 70%;
- the level of investments in research and development - 2% of GDP (1% public sources and 1% private sources);
- achieving the "20/20/20" objective in the field of climate change and energy - national target "20/24/19";
- the rate of early school leaving – 11,3% and the share of the population with higher education and the age between 30 and 34 – 26,7%;
- reducing by 580 thousand the number of people at risk of poverty or social exclusion.

The available information regarding the effect of the Cohesion Policy on the objectives of the programmes it co-finances reflects the extent to which the Cohesion Policy contributes to the achievement of general policy objectives, namely strengthening the capacity of national and regional economies, and promoting sustainable development, economic, social and territorial cohesion (Marcu and Dobrotă, 2016). Of the 11 thematic objectives destined to growth for the period 2014-2020 of the cohesion policy, the thematic objective no. 4 (TO 4) is intended to support the transition to a low carbon economy. Thus, among the main monitoring indicators of the Europe 2020 Strategy, through the TO 4, the support of the European Structural and Investment Funds (ESI funds) is aimed at achieving the "20/20/20" objective in the field of climate change and energy (national target "20/24/19"), being closely related to the thematic objective regarding the promotion of sustainable and quality employment and supporting labour mobility, it indirectly contributing to the increase of the performance in the labour market, a subject studied by Marcu et al., 2018, but from a different angle.

The main purpose of this study is to analyse the state of Romania in terms of the implementation of European funded projects, with the main objective of reducing carbon emissions. Thus, it will start from the target set for Romania by the TO 4 of the cohesion policy and will analyse the operational programs that contribute, through their established investment priorities, to reaching this objective, in terms of financial allocation, contracting, execution of projects (payments reported to contracting) and last but not least, from the point of view of the absorption recorded on 31.12.2019 on each priority axis contributing to TO 4.

The achieving of TO 4 intended to support the transition to a low carbon economy

This thematic objective no. 4 of the cohesion policy, intended to support the transition to a low carbon economy, was planned to be achieved through the use of ESI funds, as follows:

- cutting down the greenhouse gas (GHG) emissions, compared to 1990 - target 20%, estimated at the level of 2014-2020 Partnership Agreement for Romania (2014RO16M8PA001)

According to NRP 2019, the historical and forecast values associated with the greenhouse gas emissions show that Romania will respect its emission limit assumed, according to Decision no. 406/2009 / EC on Member States' effort to reduce greenhouse gas emissions, so as to comply with EU commitments to reduce greenhouse gas emissions by 2020.

- In the process of developing the programs, the synergy between National strategy for climate change and economic growth based on low carbon emissions (CRESC) and ESI

funding was ensured, so that 27,53% of the national allocation from the Partnership Agreement level targets the supporting of the actions aimed at reducing greenhouse gas emissions.

- In terms of allocation, the support given to the objectives related to climate change at the program level is as follows: Large Infrastructure Operational Program (LIOP) 26,62%, Regional Operational Program (ROP) 25,25%, Competitiveness Operational Program (COP) 1,13%, Human Capital Operational Program (HCOP) 1,22%, Administrative Capacity Operational Program (ACOP) 0,22%, National Rural Development Program (NRDP) 45,78%, Fisheries and Maritime Affairs Operational Program (FMAOP) 18,018%.

- In terms of implementation, LIOP contributes to measures of reducing the GHG emissions in the energy sector and to stimulate energy production from non-polluting sources, through 3 integrated projects of district heating (11,89 million Euros). For the transport sector, is supported the development of an efficient, sustainable, safe and low environmental impact transport system, by financing projects aimed at increasing the degree of safety and improving the environmental conditions for all types of transport, as well as those for increasing the degree for sustainable use of airports. It is also financed the consolidation and extension of integrated waste management systems through projects that develop integrated waste management systems or which have the objective of realizing energy efficiency installations with high efficiency cogeneration (18 phased development projects of integrated systems of waste management, totalling 203,67 million Euros, through which implementation will reach an additional waste recycling capacity of 966,732 t / year).

- ROP supports the development of sustainable urban mobility by financing projects aimed at reducing the dependence on the use of automobiles, by developing an efficient public passenger transport system and stimulating mobility. 1,74 billion Euros are allocated for projects intended to purchase public transport means (rolling stock - trams, trolleybuses and electric buses) that can be equipped with software and equipment related to integrated passenger ticket systems (e-tickets or e-ticketing), traffic management systems and others. Likewise, are aimed investments targeting the reconversion and/or reuse of unused and abandoned lands and their transformation into pleasure and recreation areas for the population (ERDF – 197,60 million Euros).

- NRDP sustains the efficient use of resources and supports the transition to an economy with low carbon emissions and resistant to climate changes in the agricultural, food and forestry sectors (290,2 million Euros from European Agricultural Fund for Rural Development - EAFRD).

➤ the share of energy from renewable sources in the gross final consumption – 24%
In 2017, the share of energy from renewable sources in gross final energy consumption was 24,5%. The indicator values for 2014-2017 exceed both the European target (20%) and the assumed national target (24%), as they were set for 2020.

- through LIOP project calls were launched (22,3 million Euros, of which 18,95 million Euros from ERDF) for the development of the energy distribution infrastructure from alternative sources - distribution sector.

In this respect, in December 2018, according to the Progress Report on the implementation of the Partnership Agreement (issued in August 2019), the achievement of Thematic Objective no. 4 through the use of ESI funds was achieved as follows:

1. Regarding the ROP, during the calls launched until December 2018 related to Priority Axis (PA) no. 3, 467 projects (511,19 million Euros) were submitted for Residential buildings, 686 projects (917,43 million Euros) for Public buildings and 124 projects (295,27 million Euros) for Public lighting. Likewise, 107 projects were submitted for urban mobility with a non-reimbursable value of 765,88 million Euros, and at the end of 2018 were contracted 22 projects (162,43 million Euros) and were certified expenses of 96,26 million Euros. As

far as AP no. 4 is concerned, through this is financed within the TO 4 measures aimed at reducing CO2 emissions by stimulating sustainable urban mobility in the county's resident municipalities, through investment priority (IP) no. 4.1 - 116 projects (1,24 billion Euros) have been submitted, and at the end of 2018 were contracted 19 projects (206,31 million Euros).

2. LIOP - on December 31, 2018, calls representing 94% of the allocation of each PA contributing to OT 4 (AP no. 6 and 7) were launched. The financing contracts signed represented 8,3% in the case of AP no. 6 and 22% in the case of AP no. 7. Performance indicators were not reached for the PA no. 6, the value reached for the installed capacity for renewable energy production from contracted projects being 0 compared to the target of 48 MW, for the installed capacity for high efficiency cogeneration energy production from projects contracted being 17,14 against the target of 40MW and the total amount of eligible expenditure from the accounting system of the certification authority, being 628.036,99 Euros compared to the target of 27.269.778 Euros. Thus, for the PA no. 6 the values reached for the indicators related to the performance framework do not allow the fulfilment of the conditions for the definitive allocation of the performance reserve in the amount of 11,83 million Euros from non-reimbursable funds. The insufficient progress in implementing the priority was due to the complexity of the applicable state aid rules and the small amount of support that can be granted under them.
3. NRDP - up to December 31, 2018, were committed total public expenses of 231,5 million Euros (employment rate 66,9%) representing the total public amount contracted, out of which were conducted total public expenses for the operations started/completed amounting 58,9 million Euros (degree of payment of 17,0%).
4. FMAOP supports aquaculture farms for the use of renewable energy sources, allocating approximative 2,7 million Euros from European Fund for Fisheries and Maritime Affairs (EFFMA). The total number of contracts is 3, with an EFFMA value of 0,124 million Euros and payments made from EFFMA of 0,056 million Euros.

The analysis of Regional and Large Infrastructure Operational Programs regarding their contribution to TO 4

We chose to analyse these 2 operational programs because we noticed that the EU funds allocated to them contribute the most to the thematic objective 4 aimed at supporting the transition to a low carbon economy.

1. The Regional Operational Program

The ROP 2014-2020 aims to increase economic competitiveness and improve the living conditions of local and regional communities, by supporting the development of the business environment, infrastructure and services, for the sustainable development of the regions, so that they can manage effectively their resources and to harness their potential for innovation and assimilation of technological progress.

These objectives are translated into 11 priority axes (plus a technical assistance axis), which have a total estimated allocation of 8,25 billion Euros, of which 6,7 billion Euros represent EU support, through the ERDF, and 1,5 billion Euros - the national contribution.

In order to meet the challenges related to the Europe 2020 Strategy, as well as to sum up the investments in urban public transport (TO 4), the investments made through the ROP will contribute to the achievement of sustainable urban transport systems by achieving the following results:

- reducing air pollution and noise pollution, as well as energy consumption;
- ensuring accessibility to the public and private transport system for all citizens;
- development of the infrastructure for non-motorized means of transport;

- increasing of the attractiveness and improving the quality of the environment and the arrangement of urban spaces.

Thus, of the 11 priority axes, the priority axis no. 3 (Supporting the transition to a low carbon economy) and investment priority no. 4.1 (Promoting strategies to reduce carbon dioxide emissions for all types of territory, in particular urban areas, including promoting sustainable urban mobility plans and relevant measures to mitigate adaptations) within the priority axis no. 4 (Supporting sustainable urban development) contributes to achieving the TO 4, through the following types of funded activities:

- Priority axis no. 3 (Supporting the transition to a low carbon economy):
 - energy efficiency of public buildings, including measures to strengthen them
 - energy efficiency of residential buildings, including measures to strengthen them
 - investments in public lighting
 - measures for urban transport (paths of rolling/ bicycle lanes/ purchase of ecological/ electric means of transport, etc.)
- Investment priority no. 4.1 (Promoting strategies to reduce carbon dioxide emissions for all types of territory, in particular urban areas, including promoting sustainable urban mobility plans and relevant measures to mitigate adaptations):
 - measures for urban transport (paths of rolling/ bicycle lanes/ purchase of ecological/ electric means of transport, etc.)
 - the revitalization of urban areas (reconversion and re-functionalization of abandoned lands, etc.)

Regarding the priority axis no. 3, from the data obtained from the site of the ROP managing authority regarding the projects contracted until 31.12.2019, we can say that out of the total allocation of this priority axis, worth 2,374,57 million Euros, EU Funds, were contracted projects, which contribute to supporting the transition to a low carbon economy, worth 57,72% of the allocation, and the execution of these projects (payments reported to contracting) is approaching 10%. Also, until 31.12.2019, payments were made to beneficiaries with an estimated value of 136,52 million Euros, EU Funds, this value representing an absorption of European funds related to this priority axis of 5,75%.

Regarding the investment priority no. 4.1, from the data obtained on the projects contracted until 31.12.2019, we can say that from the total allocation of this investment priority, worth about 900 million Euros, EU Funds, were contracted projects, which contribute to the promotion of strategies to reduce the carbon dioxide emissions for all types of territory, worth approximately 114,76% of the allocation, and the execution of these projects (payments reported to contracting) approaches 7,5%. Likewise, until 31.12.2019, payments were made to beneficiaries with an estimated value of 78,11 million Euros, EU Funds, this value representing an absorption of the European funds related to this investment priority of 8,68%.

2. The Large Infrastructure Operational Program

The LIOP strategy is oriented towards the objectives of the Europe 2020 Strategy, in conjunction with the National Reform Program and the Country Specific Recommendations, focusing on sustainable growth by promoting a low carbon economy through energy efficiency measures and green energy promotion, as well as by promoting environmentally friendly means of transport and a more efficient use of resources.

The LIOP addresses to the development needs of four sectors: transport infrastructure, environmental protection, risk management and adaptation to climate change, energy and energy efficiency, contributing to the Union Strategy for smart, sustainable and inclusive growth, by financing 4 of them 11 thematic objectives of the Regulation no. 1303/2013. Achieving the TO 4 with the help of LIOP is achieved by supporting the production of energy from renewable sources, energy efficiency measures and the introduction of smart technologies.

Thus, of the 8 priority axes, the priority axis no. 6 (Promoting clean energy and energy efficiency in order to support a low carbon economy) and priority axis no. 7 (Increasing the energy efficiency in the centralized district heating system in the selected cities) contributes to achieving the TO 4, through the following actions financed:

- Investment priority no. 6.1 – The increase of energy production from less exploited renewable resources (biomass, biogas, geothermal):
 - The realization and/or the modernization of the production capacities of the electrical and/or thermal energy from biomass and biogas;
 - The realization and modernization of thermal energy production capacities based on geothermal energy;
 - Supporting investments in the expansion and modernization of electricity distribution networks, in order to take over the energy produced from renewable resources in safe conditions of The National Energy System functioning.
- Investment priority no. 6.2 – The reduction of energy consumption at the level of industrial consumers
 - The implementation of energy monitoring systems for industrial consumers.
- Investment priority no. 6.3 - Reducing the average consumption of electricity at the level of homes
 - The implementation of intelligent distribution in a homogeneous area of household electricity consumers (demonstration projects in the regions covered by the concession distribution operators).
- Investment priority no. 6.4 – The increasing of savings in primary energy consumption produced by high efficiency cogeneration
 - The construction/ modernization of high efficiency cogeneration power plants (maximum 8 MWe) on natural gas and biomass at the enterprise level;
 - The development/ modernization of high-efficiency cogeneration power plants using waste gases from industrial processes at the enterprise level.
- Investment priority no. 7.1 – The increasing of the energy efficiency in the centralized systems of transport and distribution of the thermal energy in the selected cities
 - The modernization/ extension of primary and secondary thermal networks from thermal energy supply systems, including thermal points; the expansion of the transmission network and the distribution will be financed only in the context in which the existing network was rehabilitated, and the extension is justified in order to emphasize the sustainability of the system;
 - The purchase/ modernization of the equipment necessary for the proper functioning of the heat pumping systems;
 - The implementation of Management Systems (measurement, control and automatization of the Centralized Thermal Power Supply System).
- Investment priority no. 7.2 – The increasing of the energy efficiency in the centralized system of heat supply in Bucharest
 - The optimization/ rehabilitation/ extension of the transport and distribution networks of the thermal energy by resizing them, corresponding to the flow rates of the thermal agent conveyed, in close correlation with the programs of thermal rehabilitation of the buildings and the effects of reducing the thermal energy consumption;
 - The zoning and reconfiguration (routes and lengths) of the transport and distribution networks of the thermal agent;
 - The implementation of the solution for the realization of the network with pre-insulated (or similar) pipes, equipped with a system for detecting, signalling and locating losses, in order to reduce them;
 - The rehabilitation/ reconfiguration of valve platforms, fittings and construction elements;

o The completion of the Centralized Monitoring System (SCADA).

Regarding the priority axis no. 6, from the data obtained from the site of the LIOP managing authority regarding the payments made to the LIOP beneficiaries until 31.12.2019, we can say that out of the total allocation of this priority axis, amounting to 197,33 million Euros, EU Funds, have been contracted projects, which contribute to the promotion of clean energy and energy efficiency in order to support a low carbon economy, worth 13,46% of the allocation, and the execution of these projects (payments reported to contracting) is approaching 21, 47%. Likewise, until 31.12.2019, payments were made to beneficiaries with an estimated value of 5,70 million Euros, EU Funds, this value representing an absorption of the European funds related to this priority axis of 2,89%.

Regarding the priority axis no. 7, from the data obtained regarding the payments made to the LIOP beneficiaries until 31.12.2019, we observe that from the total allocation of this priority axis, amounting to 249,48 million Euros, EU Funds, were contracted projects, which contribute to the increase of energy efficiency at the level of the centralized district heating system in the selected cities, worth 37,45% of the allocation, and the execution of these projects (payments reported to contracting) is approaching 7,16%. Likewise, until 31.12.2019, payments were made to beneficiaries with an estimated value of 30,46 million Euros, EU Funds, this value representing an absorption of the European funds related to this priority axis of 12,21%.

Conclusions

Regarding the allocation on the 3 priority axes and an investment priority within the Regional and Large Infrastructure Operational Programs, whose main objective is to reduce carbon emissions, on 31.12.2019, we can say that they do not record a significant value, namely approximately about 6,74% (calculated in the total payments, at 31.12.2019, reported to the total allocation for the 3 axes and an investment priority). Based on this analysis, we consider that the Romanian authorities within the system of management and control of the European funds, together with the beneficiaries of the projects, have to make many efforts in order to reach the assumed targets regarding the reduction of carbon emissions. Although it seems that we are at the end of the programming period, 2014-2020, it must be taken into account that the actual implementation of the projects started relatively late and the last day in which eligible payments considered during this programming period can be made is 31.12.2023. Thus, we consider that the targets, and especially those referring to the thematic objective 4 of the cohesion policy 2014-2020, aimed at supporting the transition to a low carbon economy, are likely to be achieved in the next 4 years and Romania it may even be considered a country where carbon emissions have been reduced.

Regarding the EU proposals on the 2021-2027 Multiannual Financial Framework, on a modern budget for a Union that protects, empowers and defends, for the cohesion policy the Commission has proposed a budget of 373 billion Euros ($\frac{1}{3}$ from the budget of the European Union), and Romania has proposed an allocation of 30,6 billion Euros, with 8% more than in 2014-2020. We note that the EU's efforts to reduce carbon emissions in the 2014-2020 programming period are ongoing, one of the investment priorities that EU interventions will focus on for the period 2021-2027 is represented by a greener Europe, without carbon emissions (putting in implementation of the Paris Agreement and investments in energy transition, energy from renewable sources and combating climate change). As Cristea and Dobrotă, 2017, studied and concluded, Romania needed and continues to need to adopt Green Energy Economy by: decreasing CO₂ emissions and the intensity of greenhouse gas emissions (GGE), raising the renewable energy consumption and increasing the biofuel consumption.

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DIGITAL TEACHING IN ROMANIA DURING COVID 19

Cristina Veith¹

¹⁾ The Bucharest University of Economic Studies, Romania

E-mail: cristina.veith@fabiz.ase.ro

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Abstract

Europe's digital transformation is being accelerated by the new advances in technology, such as artificial intelligence, robotics, cloud computing and blockchain. The achievements in the field of information and communication technology (ICTs) in recent years have been spectacular. In order to be able to provide young people with the education they need at work and in social life, the school needs to adapt and introduce new forms of learning based on the principle of collective exploration, play and innovation. Digitization in education is a complex process that involves a number of aspects external to the education system. The main factors involved are related to quality, technological infrastructure, pedagogical approaches and last, but not least, organizational elements. The present study included a secondary research of the academic literature, after which a questionnaire was formulated. The questionnaire consisted of two parts. The responses were analyzed and structured to be then exported to the SPSS program, with the support of which the multiple regression method was applied. In this crisis situation, Romania has taken important steps towards the digitalization of education. This experience is very helpful in meeting the digitization requirements of education imposed by the European Union. At present, when information is easily accessible and the economic environment is constantly changing and adapting, I am convinced that we need fast, efficient and effective actions, so as not to lose the advantage of what we all have already learned.

Keywords

Education, digitalization, academic environment, biological crisis, Romania.

JEL Classification

A22, A23, I12, I21, I23

Introduction

“Any sufficiently advanced technology is indistinguishable from magic.”, said the British science fiction writer Arthur C. Clarke (Clarke, 2020). This quote challenges us to be creative and not let us be scared or influenced by what cannot be done, but inspired by what can be done. Wherever we encounter magic we must be sure that we will also find magicians.

Technology has proven to irrevocably transform the way we conduct our business. The new conquests of the IT industry have been adopted by the younger generation around the world with amazing speed and ease. Whether we are talking about computers, tablets or phones, even the smallest children, even before they know how to read, are able to use them faster than the adults that read the instructions. In such situations we ask ourselves how and where these skills can be learned.

The achievements in the field of information and communication technology (ICTs) in recent years have been spectacular. Mobile tools such as laptops, tablets and smart phones in combination with cloud applications and virtual communication networks, supported by the internet, have laid the foundation for teaching and learning in the virtual environment (Barak and Ziv, 2013).

One factor that slowed down the implementation of these tools in education was the perception of teachers related to these tools which they see as factors that distract students from communication with their teacher (Barak, 2013). On the other hand, students consider digital materials as interesting, fun and motivating them to learn when they are presented and explained during class. Students need guidance in using digital materials so that they can achieve their teaching goal (Demirkan, 2019). Even if the perception of some teachers is not positive towards the use of digital tools, Kuboja shows that this is not a real factor of influence (Kuboja, 2019). This perspective partially contradicts the elements captured by Barak six years ago (Barak, 2013), which show a positive evolution of perception in some countries around the world regarding the digitalization of education. Both authors emphasize the importance of teacher education for the proper use of modern technology.

The focus on the digitalization of education is not a new element in itself. A number of studies in this direction have been conducted in various countries around the world. The first steps focused on teacher training. The tools accepted by the education systems turned out to be computers, in the form of desktop and laptop with video projectors. Digitization is largely not present in education. The tools used aren't the revolutionary ones, that are mainly related to the software elements, but the hardware tools which facilitate and support the old teaching practices (Brun and Hinostroza, 2014). Teachers are not scared by the new developments in technology, but do not fully perceive its usefulness. An important factor for most teachers is self-efficacy. This is an important motivational factor, which is also related to the confidence and competence of teachers in performing a task (Lemon and Garvis, 2015). In Australia, for example, the training of future teachers makes it mandatory to use digital technologies in education to provide all children and young people with access to the education system (Bullock, 2013). The case of Australia is a special one, where the "distance school" system has long been implemented and used with good results.

In order to be able to provide young people with the education they need at work and in social life, the school needs to adapt and introduce new forms of learning based on the principle of collective exploration, play and innovation. The Australian curriculum is now adapted and oriented towards a more differentiated, more collaborative and creative educational system, taking into account the opportunities offered by technology (Littlejohn and Hunter, 2017).

This process of digitizing education is not without its risks. Through inappropriate use of the technology, teachers may be ridiculed, marginalized, overworked or even exploited. These risks must be taken into account in order not to lose through the overuse of technology the possibility of critical pedagogy, transparency, flexibility and creativity specific to the academic environment (Adams, 2018).

The digital transformation in education

Europe's digital transformation is being accelerated by the new advances in technology, such as artificial intelligence, robotics, cloud computing and blockchain. This transformation leads to the disappearance of jobs and the creation of new ones, for which we must have well-

prepared people. Thus, the European Commission has established a list of priorities that involve the digitization of the education system. These priorities concern: improving education through better data analysis, achieving personalized education, creating a European platform for higher education supported by Erasmus +, using digital technologies in the learning and teaching process, increasing motivation and creating measures to reduce the differences in girls' digital skills compared to boys (European Commission, 2018).

In April of this year, McKinsey published an article in which the pandemic caused by COVID-19, forced the transition from classical to online education, and compared it to a climate crisis. Among the common aspects of the two phenomena is that of global cooperation and coordination, which in the case of education can open new horizons for long-term increase in quality (Pinner, Rogers and Samandari, 2020). Even if it does not refer directly to university education, the results of the PISA study from 2018 show a decrease in the level of training of young people, and the results in Romania were not at all gratifying. Positioning our country on level 2 of 6 shows how many measures to improve the learning process are required (Schleicher, 2019).

Digitization in education is a complex process that involves a number of aspects external to the education system. The main factors involved are related to quality, technological infrastructure, pedagogical approaches and last, but not least, organizational elements. The provision of online and flexible educational programs also influences and is influenced by the degree of internationalization. To achieve this, the most correct administrative conditions and solutions, data security systems, plagiarism and fraud detection, data storage and research, access to libraries and other e-learning resources, communication and collaboration between universities must be ensured (Tømte et al., 2019). An inevitable condition for the real success of the digitization of the educational system is the preparation of teachers and pupils and students for the correct and maximum use of technological resources (Rienties, Brouwer and Lygo-Baker, 2013). In Australia, for example, a working group has been set up to analyze the situation in educational institutions in relation to the gaps and barriers in the effective use of digital tools in education. The article published in 2019 by Professor Podorova and colleagues presents the level of knowledge, digital skills and confidence in their use at a very low level, even among young people (Podorova et. al., 2019). This confirms the need for schooling on digital issues among all participants in the field of education.

A positive example in the use of digital tools and methods is Finland, where various digital tools are used, such as audio, video and interactive platforms. These tools have a positive effect on the academic performance of students. Their autonomy and flexibility method in relation to space and time is a real support for students who cannot regularly attend courses. Students can choose their courses according to their own interests and can individually manage the time they need to study. This form of learning also presents the obvious limitation of the lack of direct interaction with the teacher, if the study is carried out outside the pre-established program (Rama Devi et. al., 2019).

Digitization of the academic educational process in Romania

By changing from one day to another the education system from the classical one to online, a situation that took place in Romania in March of this year, the vast majority of teacher faced a great challenge. The lesson plan, the content and the number of topics offered for discussion were changed. One aspect that students noticed and complained about was the large volume of homework that appeared with the transition to online education. Without prior teacher training for online course, they were overwhelmed by a very large volume of student responses to their questions and homework assignments. This has led to an exponential increase in workload, and in some cases to a negative impact on the quality of the learning process.

The digitization of the educational process can be implemented through decisions of the external environment (government, laws, regulations, etc.) and / or through initiatives of the internal environment, which are often top-down (Zawackcki-Richter and Latchem, 2018). At the moment, the transition has been clearly caused by a situation external to the learning process, and the central question of this study is how it was perceived by students and to what extent digitization can offer a chance to increase in the quality of learning.

Fortunately, in many situations, as the results of the analysis in this study show, the quality of learning has increased with the correct use of modern technical means.

The present study included a secondary research of the academic literature, after which a questionnaire was formulated. The questionnaire consisted of two parts. The first part is related to the age, sex, occupation of the respondents while the second part consisted of seven questions with scale answers. At the end of the questionnaire, students were invited to express their views on the online learning experience through an open-ended question. The students' answers to the questionnaire formed the basis of the primary analysis. The responses were analyzed and structured to be then exported to the SPSS program, with the support of which the multiple regression method was applied (Sreejesh, Mohapatra and Anusree, 2014).

The multiple regression analysis was chosen, because it is a dependence technique in which we could analyze the relationship between a single-dependent variable and several independent variables. The proposed questionnaire received 226 responses, of which 63.7% came from women and 35% from men. The difference was 1.3%, respectively those who did not want to answer specifically.

The dependent variable for achieving the multiple regression was the positive experience of online learning with the increasing quality of learning as a result. Thus, we analyzed to what extent the increase in learning quality depended on the following aspects defined as independent variables questions: "easier access to information?", "Can online education occasionally compensate for attending classes (in situations of illness, etc.)?", "Does combining interactive platforms with video tools increase the quality of learning?", "Does direct personal feedback during class help better learning?", "Is it an advantage to be able to answer all the questions raised during class?" Is the fact that the question is accessible only to the teacher is it an advantage?".

Table no. 1, generated by the SPSS program, presents the regression output. This shows the model summary, which provides the value of R (Multiple Correlation), R² (Coefficient of Determination) and Adjusted R² (R² adjusted with Degrees of Freedom). In this study of R is 0.941. It indicates the multiple correlation between dependent and independent variables. In the case of this analysis we can say that in a proportion of more than 90% the increase of learning quality depended on the advantages offered by digital tools. The value of R² tells us that our dependent variable is determined by the dependent ones in proportion of 88.5%. This means that there are other factors that influence the analyzed dependent variable with a weight of 11.5%.

Table no. 1 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,941	,885	,882	,683	,885	282,069	6	219	,000	2,043

Source: own research

Applying the analysis of variance, we get all the sums of squares associated with regression. These values are small and confirm our conclusion. Another important value is that of F,

which is in our case 282,069. This is significant, which means that there is a less than 0.1% chance that the null hypothesis will be true.

Multiple regression has confirmed that the correct use of digital learning tools can lead to improved learning. Even without the use of multiple regression, the large number of responses received from students in favor of digital tools leads us to the same conclusion.

For example, in question 5 “Being able to receive direct feedback to your answers during the online courses helped you to understand and learn better?” 75% of the students answered that it had a very positive effect on them. For 12% of the students it was an average influencing factor, and for the rest, it did not significantly influence the quality of the understanding of the subject or of its learning.

The use of the immediate feedback influence on the learning process has been tested in various studies. In order to differentiate the feedback that the teacher normally gives in class that all present students can hear, we also asked if each student had the opportunity to answer all the questions, and if the teacher’s feedback was seen only by the responding student, this encouraged them to be more active in class. The students acknowledged that the classes were much more demanding, that they were motivated by these methods to participate more actively in the class and that the personalized feedback received by each individual, without being exposed to the criticism of colleagues motivated them to respond more actively. Because of this, the most shy or insecure students were more involved throughout the course. There are several digital tools for conducting these types of tests and information stabilization exercises. One of them is the Poll-Everywhere application, which also had good results in the case of language teaching (Ismail, Elihami and Mustakim, 2019).

From the perspective of master's and doctoral students, it is necessary to use blended strategies and digital technology to support the interaction between teacher and students, but also between students. Students participating in these programs are required not only to accumulate information, but to be able to analyze the materials proposed by teachers so they can draw their own conclusions, which they can apply in their professions in everyday life. In the case of doctoral students, it is necessary to be able to analyze and synthesize scientific materials, most importantly creating original and valuable materials (Balula, Vasconcelos and Moreira, 2019).

Conclusions

The vast majority of students surveyed had a positive online experience (72.6%), which allowed them to obtain good learning outcomes. The next exam session will show us if this experience will be reflected positively on the students' grades. In this crisis situation, Romania has taken important steps towards the digitalization of education. This experience is very helpful in meeting the digitization requirements of education imposed by the European Union. Regarding the measure proposed by the European Union to reduce the differences between girls and boys in terms of digital skills, our country is in a very favorable situation, this being almost non-existent in the case of Romania.

Will positive results related to online learning and the additional benefits it brings, without being able to replace interpersonal interaction, be taken into account even after the factors that determined this situation will disappear? Can all the tools that have allowed the exponential growth of students' attendance at online courses and seminars be neglected in the future? The effect of Matthew is known in science, which also tells us that for the results of scientific research to produce effects it must belong to a recognized author and be cited by other personalities in their work (Merton, 1968). At present, when information is easily accessible and the economic environment is constantly changing and adapting, I am convinced that we need fast, efficient and effective actions, so as not to lose the advantage of what we all have already learned.

Another relevant aspect presented by the students from the faculties that prepare them for creative professions such as journalism or communication, the lack of human interaction is a negative factor. This is also a limitation of the present study, which did not propose from the beginning the differentiated analysis of students' training in the case of creative professions compared to the rest.

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FEMININE LEADERSHIP IN SCIENCE AND EDUCATION

**Andreea Simona Săseanu¹, Simona Ioana Ghiță², Sorin George Toma³
and Cristina Rodica Boboc⁴**

¹⁾²⁾⁴⁾*The Bucharest University of Economic Studies, Romania*

²⁾⁴⁾*Institute of National Economy, Romania*

³⁾*University of Bucharest, Romania*

E-mail: andreea.saseanu@com.ase.ro; E-mail: simona.ghita@csie.ase.ro

E-mail: tomagsorin62@yahoo.com; E-mail: cristina.boboc@csie.ase.ro

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Abstract

Leadership is the position or function of being a leader; a governing act or court; guidance; direction; the group leader (Dictionary.com, 2006).

Following a survey of female leader- respondents, it was reached the conclusion they are likely to lead because of their inheritance, which is based on their abilities and talent. They are persuasive and have rich experience, strengths that have allowed them to be in a leading position (Astin and Leland, 1991). The leading women come from all geographical areas, from big cities to small ones, with a varied experience and past, but they all have the same common goal – to lead.

The ability of being a successful leader is often studied because it is a complex one and the success of a project or organization depends on it.

The present paper aims at identifying a series of behavioral typologies of European countries, through involvement of women in the decision-making process, in science and education, the quality of women's employment and the resources oriented to education, research and development.

Keywords

Female leadership, science, education, research and development.

JEL Classification

L66, Q18, D18, E21

Introduction

Although it cannot be exactly defined, leadership is a concept to which each of us can contribute by a formulation that could highlight the characteristics and usefulness of it. At the same time, it can be described as a multitude of attributions based on the desire for

development, innovation, with the help of a team whose members have well-defined roles, being able to collaborate in order to aim to completing a well-developed plan.

Presently, it is desired to have gender equality in terms of women's presence within the management structures in various fields - from business environment to politics, including the education area. Another aspect is remuneration: even if it is desirable to have equal level of payment, men are better paid than women, for comparable positions. Women leaders tend to worry more, to have less confidence in their own strengths, are more self-critical, but more open to feedback and self-development. They have an introspective spirit, are less impulsive, dominant, more collaborative, and more pragmatic in terms of problem solving and are more execution oriented. Women leaders are motivated to help develop and improve their teams. They focus on creating a pleasant working atmosphere and are attentive to their team's mood. Women believe in traditional values and the values of the organization they lead, they have strong ethical principles and are attentive to their personal image

Nowadays, even if women are present in the field, they do not have the same significant role in science and education, regarding the management level.

Based on the analysis of a set of 11 initial variables, the present paper identifies three complex variables, with a synthesizing function and defines patterns of behavior of European countries in terms of human development, quality of female employment, involvement of women in leadership positions in science and education, of resources oriented towards education, research and development. At the same time, a series of measures are proposed in order to correct the existing dysfunctions in these areas.

Stage of knowledge

Leadership is the factor that promotes innovation because it induces the implementation of creative ideas (Yoon, Lee, and Schniederjans, 2016). Led by the charisma of the leader, the members take the initiative and develop a sense of belonging to the group. Businesses characterized by effective leadership and strong innovation capabilities can easily cope with the ever-changing business environment because they are able to identify opportunities quickly (Chassagnon and Haned, 2015). The views of the above-mentioned authors encompass a number of characteristics of the effective leader that must be identified with the innovative environment of 21st century (Xie et al., 2018).

According to Kets de Vries, in the past, the structure on which an organization stood on, was based on stability, orientation towards nationalism, technology, a well-defined hierarchy. Currently, the author argues this organizational thinking has taken on a completely different meaning, based on internationalization, change and discontinuity, interdependence between employee and employer.

Existing literature in the field of leadership has studied the effects of different styles for this concept, the main objective being an innovative atmosphere in the team's perspective.

In the last three decades, women have been able to equal men in the labor sector, in the usual positions of workforce or in middle management. Women now make up 57% of the US labor market and 52% of all managerial roles and occupations, such as physicists or lawyers. They represent a total of 60% of the graduates of US universities and also exceed the total number of men in the category of masters and doctoral graduates.

Higher education institutions constantly face challenges of diversity management. In terms of university studies, the percentage of young women is higher than of young men in terms of probability of attending a college and having a university degree, only 20% of students in the faculties of exact sciences (IT and engineering) are women (OECD, 2017).

A study by Catalyst (2020) shows the position of women in universities in terms of attendance among teaching staff.

In Asia-Pacific area there is a large presence of women in the university environment at different levels of academic rank. Thus, in Australia women are present at a lower level of

academic rank - 46.8% of lecturer positions being held by women and only 33.9% of the above lecturer positions are held by women (lecturer and teacher). Women also occupy 54.7% of the assistant positions and 53.8% of lower positions of university assistant (Australian Government, Department of Education and Training, 2018).

In Canada, the presence of women in universities is growing. They represent 41% of the academic staff who teach and are permanently employed in the academic year 2018-2019 (Statistics Canada, 2019)

Only for the position of university professor the presence of women does not equal that of men-women, there being only 28% women university professor. The position of associate professor is represented by 44% of women, while for the position of university lecturer there is a parity of 1 to 1 with men (50%). Below this position the presence of women is 55% (Statistics Canada, 2019). Regarding the income, women earn less than men, especially in the area of academic teaching. Thus, in the academic year of 2017-2018, a female professor had an average annual income of 158,625 US dollars, while a male university professor earned 166,925 US dollars (Canadian Association of University Teachers, 2019). These values are for comparable positions.

In Europe, it has been observed that an increase in the level of academic rank increases differences between women and men. At the level of European Union (EU-28) women occupy in proportion of 41.3% university positions in 2016 (European Commission, 2019). Regarding university professors, there are only 23.7% women, lecturers - 40.5% women lecturers and university assistants - 46.4% women. Among the countries where women are under-represented at university level are the Netherlands (18.7%), Germany (19.4%), France (21.9%), Switzerland (23.3%) and Sweden (25.4%).

In terms of university management, the presence of women is even lower - only 21.7% of the university staff is represented by women (EU-28 level).

Speaking about the income level, women in British academic environment earn, on average, 15.1% less than men (University and College Union, 2019).

In the United States, women's chances of getting leadership positions are lower. Although they hold almost half of the positions (49.7%), only 39.3% of the management positions are occupied by women. As in all continents, women hold lower level academic positions. The position of assistant professor is occupied by 52.9%, 46.4% is represented by lecturers and only one third for the level of university professor in 2018 (National Center for Education Statistics, 2018).

Black population registers a low level of women's presence in academic field. The number of this category has grown in part-time area by 230% in between 1993-2013 and only by 30% in terms of full-time position. Concerning women of color and Asian or Hispanic descent, there is a low percentage, below 5% for most academic levels (teacher, lecturer, assistant) (National Center for Education Statistics, 2018).

However, there is increase in the presence of women in leadership positions among colleges and universities, from 10% to 30%. There is also increase in racial diversity, from 13% to 17% in 2011-2016 (American Council on Education, 2017).

Presenting the above statistics, one can easily observe a pattern regarding the presence of women in university environment: they are numerous in entry positions, among those who teach - university assistant and lecturer, while at the level of university professor their presence is low. Regarding management, their presence is even smaller, compared to teaching. Another aspect reported is the income level - a much lower one compared to men, for the same type of job.

Research methodology

Based on complex, multidimensional statistical analysis, the paper aims at achieving the following objectives: ● identification of complex variables in order to synthetically

characterize the activity in the field of science and education; • defining behavioral typologies of EU and non-EU countries in terms of human development, quality of female employment, involvement of women in leadership positions in science and education, resources oriented towards education, research and development; • proposing a set of measures in order to mitigate and / or eliminate the behavioral dysfunctions of European countries.

Concerning the research, firstly, there are analyzed a series of statistical variables defining the degree of occupation of top-management positions by women in science and education, level of training, educational and vocational training of female workforce, women's participation in labor market, gender wage imbalances, governments' concern for allocation of financial and human resources in the field of education, science and technology, research and development. The data set from which the analysis started comprises 11 variables from the above mentioned areas, their values being taken from the European Institute for Gender Equality and EUROSTAT and covers 33 European countries, member or non-member EU, for 2017 (last year for which the values of all variables were available) (Table no. 1).

Data set was reduced - by applying the Principal Component Analysis - to three complex variables, which kept a significant share of the initial informational variability. Based on multidimensional statistical investigation criteria, the Hierarchical Cluster Analysis - Wards' Method was used to form three clusters of European countries, with identification and characterization of behavioral patterns concerning female leadership in science and education, quality of female employment and the use of financial resources in education and research – development.

Table no. 1 Variables included in the analysis

Pillar	Variable name	Notation
Women in decision-making process in science and business domain	Female members of the highest decision-making body in research funding organisations (% of total)	W_Res_Fund_Org
	Female members of the highest decision-making body in academies of science (% of total)	W_Res_Fund_Org
	Women as board members in largest listed companies (% of total)	W_Comp_Board
Female employment	Female employment rate (% of females in total employment, 15-64 years)	W_Empl
	Females employed in science and technology, 15-74 years (% of the total population)	W_Empl_Science
Education	Females with tertiary education, aged 15-74 (% of the total population)	W_Tertiary_Ed
	Mean instruction hours spent by participant in education and training (Hours)	W_H_Ed_Training
Gender pay discrepancies	Gender pay gap in unadjusted form (%)	GPG
GDP and expenditure in education and research-development	GDP at market prices (% of EU28 total per capita, based on million Euro, current prices)	GDP
	Government expenditure on education (% of GDP)	EXP_ED
	R&D expenditure (% of GDP).	EXP_RD

Source: created by authors

Research results

At EU level, the share of female members of the highest decision-making body in research funding organizations increased from 37% in 2017 to 38.1% in 2019 (minimum Greece 12.5%, maximum Spain 58.3%), while the share of female members of the highest decision-making body in academies of science increased from 21.6% in 2017 to 25.9% in 2019 (minimum Slovenia 7.7%, maximum Norway 57.1%). The value of "Kaiser-Meyer-Olkin Measure of Sampling Adequacy" indicator (0.719 > 0.6) shows the opportunity of applying

the *Principal Component Analysis* to reduce the initial data set (Table no. 2), obtaining 3 main components that preserve 73.78% of the initial variation of the data (Table no. 3).

Table no. 2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.719
Approx. Chi-Square	225.611
Bartlett's Test of Sphericity	df
	55
Sig.	.000

Source: authors' own contribution, based on data provided by the European Institute for Gender Equality and EUROSTAT

Table no. 3 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.052	45.926	45.926	5.052	45.926	45.926	3.150	28.634	28.634
2	1.801	16.373	62.299	1.801	16.373	62.299	2.843	25.845	54.478
3	1.263	11.483	73.782	1.263	11.483	73.782	2.123	19.303	73.782
4	.775	7.045	80.827						
5	.682	6.199	87.025						
6	.484	4.395	91.421						
7	.321	2.922	94.343						
8	.238	2.166	96.509						
9	.221	2.005	98.515						
10	.116	1.052	99.567						
11	.048	.433	100.000						

Extraction Method: Principal Component Analysis.

Component 1 includes the variables: “W_Empl”, “W_Tertiary_Ed”, “W_Empl_Science” and “GPG”, which characterizes women’s employment quality through the education level, women’s employment rate, their involvement in science and technology activities, as well as the gender pay gap. We will call this component “*Quality of feminine employment*”. Component 2 groups the following four variables: “W_Res_Fund_Org”, “W_Acad_Science”, “W_Comp_Board” and “GDP”, variables coming from the sphere of the results of economic activity and of female leadership in science and business environment. Therefore, this component will be named “*Feminine leadership in science and business environment*”. Component 3 includes the variables “EXP_ED”, “EXP_RD” and “W_H_Ed_Training”, reflecting the governmental expenditures on education and research-development and will be named “*Financial resources in Education and RandD*” (Figures 1 and 2).

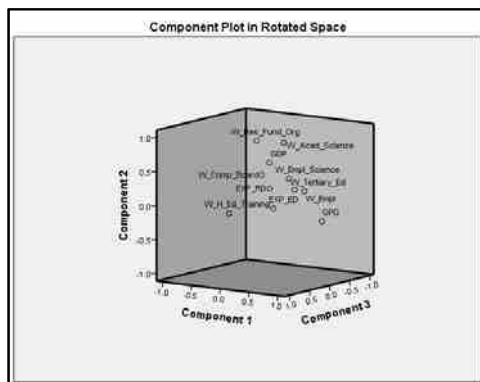


Fig. no. 1 Component Plot

Rotated Component Matrix^a

	Component		
	1	2	3
W_Res_Fund_Org		.910	
W_Acad_Science	.196	.872	-.184
GDP	.323	.671	.355
W_Comp_Board	.241	.494	.435
W_Empl	.851	.286	.240
W_Tertiary_Ed	.675	.287	.232
W_Empl_Science	.696	.476	.403
GPG	.833	-.228	-.221
W_H_Ed_Training			.838
EXP_ED	.599		.650
EXP_RD	.474	.334	.565

Fig. no. 2 Rotated Component Matrix

Source: authors' own contribution, based on data provided by the European Institute for Gender Equality and EUROSTAT.

The purpose of the analysis performed further is to identify and characterize the defining behavior models of the European countries, from the perspective of the three complex components established following the Principal Component Analysis. Thus, the 11 variables included in the analysis represent the grouping criteria for 33 EU and non-EU countries through *Hierarchical Cluster Analysis*. Countries are grouped into three clusters, as follows (Table no. 4):

Table no. 4 Cluster composition

Cluster 1	Belgium, Denmark, Germany, Greece, Spain, France, Italy, Malta, Netherlands, Austria, Poland, Portugal, Slovenia, Finland, Sweden, United Kingdom
Cluster 2	Bulgaria, Czechia, Estonia, Croatia, Cyprus, Latvia, Lithuania, Hungary, Romania, Slovakia, Montenegro, North Macedonia, Serbia
Cluster 3	Ireland, Luxembourg, Iceland, Norway

Source: authors' own contribution, based on data provided by the European Institute for Gender Equality and EUROSTAT.

Countries in the first cluster are in a favorable position in terms of component 3 – financial resources in education and research-development, with over 2% of government spending on research and development and almost 140 de hours spent by participant in education and training. Regarding the first two complex components, the countries in this cluster are characterized by a moderate level both of the quality of the women's employment, as well as of the degree of their involvement in the decision-making process in the field of science and business - these being also the recommended directions for optimizing the activity. On average, almost 30% of women have higher education, 63% participate in the workforce and under a quarter of the employees in science and technology are women. Women earn, on average, 13.6% less than men. Thus, on average, 34.55% of all members of the highest decision-making body in research funding organisations, almost 20% of those in academies of science and over 25% of the board-members of the largest listed companies – are women. On average, the countries in this cluster have a GDP per capita close to the EU-28 average.

The second cluster includes countries with the least favorable situation of the three complex components identified. Thus, the quality of female employment is lower, just under 60% of women aged 15-64 are employed on the labor market, over a quarter of women have tertiary education, and under one fifth of employees in the science and technology sector are women. Women are to a lesser extent involved in making decision process in research, science and business. They represent nearly 30% of all members of the highest decision-making body in research funding organisations, less than 19% of those in academies of science and almost 17% of the board-members of the largest listed companies. Moreover, on average, the GDP per inhabitant represented less than half of the EU-28 average (41.65%). These countries spent the least on education and research - development - relative to GDP - of all the three clusters. The average levels of the analyzed variables indicate less than 1% of government spending on research and development and little more than 4% of government spending on education. Countries in this cluster can optimize the results of their economic activity, in an intensive way, by acting in three directions: a first direction is to increase the quality of human resources by facilitating, stimulating access to education for women, their involvement in the professional training process; the second direction is to encourage female leadership, increase the women's involvement in the decision-making process in science and business, as it is a pillar of increasing the development level; thirdly, these countries need to invest more in education and research - development, because only thus can they increase labor productivity and ensure their international competitiveness.

Countries in the third cluster are generally characterized by the most favorable level of the three complex components, especially for the variables included in the first two components. Thus, these countries are characterized by a higher quality of the female workforce, with a high average employment rate of women (over 70%), a significant share of women with tertiary education (over one third, on average), an increased degree of women's employment in science and technology (over 30%) and a lower wage gap between men and women. With respect to the 2nd component, the third cluster countries are characterized by a high participation of women in the decision-making process in science and business, women representing almost 49% of the members of the highest decision-making body in research funding organisations, almost 38% - in Academies of science and around 29% of all board-members of the largest listed companies. Also, these are countries with a high economic development level, whose GDP per capita is, on average, more than 2 times higher than the EU-28 average. Government spending on education represented 5.15% of GDP on average, a higher percentage than in the other clusters, but it is recommended that the countries in this cluster improve the time spent by women in formal and non-formal education and training and the share of government spending on research and development (Table no. 5).

Table no. 5 Cluster characterization based on hierarchical classification criteria

	Comp_1 - Feminine employment quality				Comp_2 - Feminine leadership			Comp_3 - Financial resources			
	W_Empl	W_Tertiary_Ed	W_Empl_Science	GPG	W_Res_Fund	W_Acad_Science	GDP	W_Comp_Board	W_H_Ed_Training	EXP_ED	EXP_RD
Cluster 1 - Mean	63.23	29.94	22.56	13.60	34.55	19.83	107.98	25.51	139.19	5.06	2.02
Cluster 2 - Mean	59.19	26.82	18.86	13.74	30.05	18.66	41.65	16.98	82.31	4.35	0.84
Cluster 3 - Mean	70.20	36.65	30.60	12.25	48.60	37.98	238.75	28.96	108.75	5.15	1.68

Legend:

			most favorable
			moderate
			least favorable

Conclusions

Globally, there is tendency to promote women in as many areas as possible, both through adoption of government programs and through involvement of various organizations with specific role in facilitating women's access to labor market. (Sojo et al., 2016).

Both women and men have the right to inspire and fulfill their aspirations. People do this differently, because everyone has their own set of values to which they refer. Women realize things based more on their senses and intuition, while men are more oriented towards fulfilling the action plans. The analysis revealed three patterns of behavior in European countries, in terms of women's participation in science and education decision-making field, quality of women's employment and education, research and development-oriented resources. The first type of behavior is characterized by high level of spending on research and development and education; at the same time, there is a moderate level of quality of female employment and female leadership in science. The second type of behavior is manifested by the lowest levels of all criteria analyzed, while the third type of behavior is characterized by particularly favorable aspects in terms of women's participation in decision-making in science, but also the quality of strength feminine work.

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FOOD WASTE IN THE HOSPITALITY INDUSTRY IN ITALIAN AND ROMANIAN EXPERIENCE

Vera Amicarelli¹, Alina Cerasela Avram², Christian Bux³, Giovanni Lagioia⁴
and Rodica Pamfilie⁵

^{1) 3) 4)} *University of Bari Aldo Moro, Italy*

^{2) 5)} *The Bucharest University of Economic Studies, Romania*

E-mail: vera.amicarelli@uniba.it; E-mail: alina_cerasella@yahoo.com;

E-mail: christian.bux@uniba.it; E-mail: giovanni.lagioia@uniba.it;

E-mail: rodica.pamfilie@com.ase.ro

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Abstract

Every year, in the European Union (EU) approximately 20% of food produced, with associated costs estimated at €143 billion, is thrown away along the whole food supply chain. Approximately, 88 million tons (Mt) of food are yearly wasted particularly at the final consumption stage both at households and hospitality level. The hospitality industry is responsible of substantial amounts of waste and of course of Food Waste (FW). It is estimated that a hotel guest generates each day on average over than 1 kg of waste of which more than one-third is FW. Although Academia and authorities have widely recognized the issue, it remains under-researched. Based on these considerations, the authors analyze FW management within the hospitality industry, proposing a comparison between an Italian (Bari) and a Romanian (Buzau) hotel, with the final aim of understanding their food service weaknesses and the principal opportunities to prevent or minimize FW. Throughout the usage of Qualitative Content Analysis (QCA) and personal communications, the authors highlight their main characteristics and the main drivers of FW, focusing on managerial and future policy implications.

Keywords:

Food waste, food waste in tourism, hospitality waste management, sustainability.

JEL Classification:

L83, Z32, Q53.

Introduction

In the European Union, approximately 88 million tons of Food Waste (FW) is generated every year, which represents around 20% of food produced in the member states, with associated

costs estimated at €143 billion (European Commission, 2019a). In order to mitigate this phenomenon with highly social, economic and environmental impact, European Union strength the necessity of sustainability in the food and drink industry, and in other associated areas, like hospitality. In this regard, EU declared FW as one of ten major indicators of the Circular Economy Monitoring Framework and targeted the decrease food losses as one of the priorities of Sustainable Development Goal, adopted in Agenda 2030. The hospitality industry, mainly composed by hotels and restaurants (in this study also identify with the word “unit”), represents a growing sector worldwide, with a market value of over 600 billion U.S. dollars in 2018 (+28% on 2014 data) (Statista, 2020). The International Hotel Environmental Initiative (2002) has estimated that a hotel guest generates each day on average 0.8-1.2 kg of waste, an amount which is doubled on checkout days (Pirani and Arafat, 2014; Abdulredha et al., 2018). This quantity is mainly composed by solid waste (e.g. packaging), but more than one-third is represented by FW of which roughly 75% is still edible (WRAP, 2013). Although Academia and authorities have widely recognized its crucial importance, it remains under-researched. Literature investigates only a small part of the subject and the results are restricted in geographical coverage and representativeness (Filimonau et al., 2019). Moreover, there is no standardized methodology on how to assess the volume (measure) and appraise the content (qualify the composition) of hospitality FW, making it more difficult for public authorities to assess its scale, origins, and trends over time (Filimonau and De Coteau, 2019). EU legislation does not focus on FW specifically and there are no specific regulations in hospitality industry, not helping its management to adopt responsible practices. The main directives and regulations refer to the waste mitigation in other areas: Directive 2008/98/EC on waste and repealing specific directives; Regulation 1774/2002 laying down health rules concerning animal by-products not intended for human consumption; Directive 94/62/EC on packaging and packaging waste (Styles et al., 2019). In this context, it needs governments to facilitate a more sustainable activity in hospitality to adopt regulations that support FW prevention and/or minimization (Pirani and Arafat., 2016). Based on these considerations, the authors investigate FW management within the hospitality sector comparing an Italian and a Romanian hotel experiences. The aim of this paper is to identify food service weaknesses and suggest FW opportunities of prevention and/or minimization. Throughout the usage of Qualitative Content Analysis (QCA) and personal communications, the authors highlight their main characteristics and the main drivers of FW, focusing on managerial and future policy implications

Food waste in the hospitality industry

Tourism is responsible for a small share of waste generation within the EU, with a contribution of 6.7% of total waste generation (Styles et al., 2019), but predictions on its sharp increase in future years impose several challenges to economy, environment and society. In terms FW in the hospitality industry, there is still no regulatory frameworks adopted internationally, but individual initiatives prove this issue as a priority. Gretzel et al. (2019) has recored examples of reductions in pre- and post-consumption FW, respectively kitchen and plate waste, mostly due to its impact on profitability and its high costs of disposal. A further study, conducted in a five-star hotel in Malta, revealed that plate waste was an average of 0.21 kg/person at lunch and 0.16 kg/person at dinner, increasing to 0.48 kg/person during a buffet-dinner (Camilleri-Fenech et al., 2020), while a study conducted in Malaysia estimated an average value of 0.53 kg per meal (Papargyropoulou et al., 2019). The “*Piano Provinciale di Gestione dei Rifiuti*” drafted by Provincia di Bari has found an average quantity of 0.2-0.3 kg of FW per meal, depending on caterings or internal food preparations (RTI, 2009). According to literature (Pirani and Arafat, 2014; Pirani and Arafat, 2016; Kasavan et al., 2019), FW represents a pressing issue in the hospitality industry in terms of money losses in food purchasing and production. It is also important to remark that several action could be

adopted, considering that FW production per person per day strongly depends on nationality, age, educational level and consumption behavior of the single tourist (Papargyropoulou et al., 2016). However, FW occurs also during food preparation within the kitchen.

- *Study area*

The hotels global occupancy rate, which is “*the share of total rooms available which are occupied or rented at a given time*”, reaches its highest value in Europe (72.4%), where over 6.3 million bedrooms are located (not considering the United Kingdom). Among the EU-28 countries, Italy represents the highest quota, accounting for over 1 million bedrooms and similar accommodations (17%) in 2018 (Statista, 2020). The Italian number of hotels is roughly 32,900 with a capacity of over 2.2 million tourists each day (Banca d’Italia, 2019; Istat, 2020). In Romania, the total number of hotels was 1,600, with an accommodation capacity of 198,000 places and around 195,000 rooms. According to the last data published by the National Institute for Statistics (2020), in 2018, in Romania, the total number of arrivals was around 12.9 million of which 10.1 million internal and 2.8 foreign tourists. The Romanian tourism had a more robust increase in 2019, compared to 2018 and the efforts of the stakeholders to diversify the offer and to attract new tourists are visible. However, there is still room for improvement, especially in transport and tourism infrastructure. At present, the most probable market target are neighboring countries, like the Republic of Moldova, Bulgaria, Hungary and Ukraine (Fitch Solutions, 2020), which do not really support Romanian tourism. From these regions, guests arrive to visit their relatives and friends or for shopping limiting a long stays and a real demand of tourist activities (Euromonitor, 2019). The Italian experience in FW field began in 1989 with the creation of “*Banco Alimentare*”, followed by the introduction of Law 460/1997 and Law 133/1999. However, the first efficient project in such field has been carried out in 2003 in Mogliano Veneto, Marcon e Treviso (“*Buon Samaritano*”, Law 155/2003). On the 19th August 2016, the Italian Government has enacted a specific law – *Legge Gadda* (166/2016) – which contains provisions concerning the donation and distribution of food and pharmaceutical products for purposes of social solidarity and waste purchases. In Romania, FW legislation resumes at the Law 217/2016 that was completed on 30 January 2019 with the implementing rules. The main objective of the law is to mitigate the FW in Romania and to encourage food donation. Moreover, the companies that agree to donate food surpluses will benefit from tax incentives. Food donation is the subject of several rules, such as the durability of food products or the type of food (Ministry of Agriculture and Rural Development, 2019). However, a specific law to apply in hotels and restaurants sector was not developed yet in Romania, so FW remains the responsibility of each unit, depending on the interest of managers and staff regarding adopting a sustainable behaviour.

Research methodology

The authors conducted an interview followed by personal observation in two hotels situated in Italy and in Romania in order to highlight their main characteristics (e.g. managerial policies, strategies, targets related to food production, kitchen operations) and to compare two EU realities focusing on similarities/differences and weaknesses/strengths of each country with the final aim to understand the principal drivers/opportunities of FW management in hospitality industry.

- *Brief hotel description*

The Italian hotel is located in Marina of Palese, a coastal town in North of Bari in Apulia region. Its strategic position, 100 meters from the beach (Marina of Palese), 10 km far from Bari city centre, 2 km from the airport (Karol Wojtyla International Airport), well connected with central railway station and sea port make it perfect for business, cultural events and leisure stays. It is a 4-star hotel, with 101 rooms, a restaurant, a cocktail bar, four conference halls and an outdoor pool. The Romanian hotel is a 4-star accommodation unit located in the

city centre of Buzau, in the South-East Region. The unit is around 20 km away from the spa resort, Sarata Monteoru and 110 km away from Bucharest, the capital of Romania. The hotel has a capacity of 120 rooms: 90 double rooms and 30 apartments, spa centre, four restaurants for large and small events and two conference halls and is suitable for business and events.

• *Semi-structured interview and activities investigated*

The interview, composed by 20 questions both open- and closed-ended, has been based on literature, documents and manuals content (Leray et al., 2016; Pirani and Arafat, 2016; Kasavan et al., 2019) and conducted between 26th February and 7th March 2020. The interviewees have been distinguished according to their operation sectors: management (e.g. general manager, food and beverage manager), kitchen (e.g. chefs) and food service (e.g. Waiters). The activities investigated within the study (figure no. 1) include: a) purchase of raw materials; b) food preparation; c) food service à la carte and/or buffet; d) food disposal of inedible food; e) food disposal and/or recovery of unconsumed and still edible food.

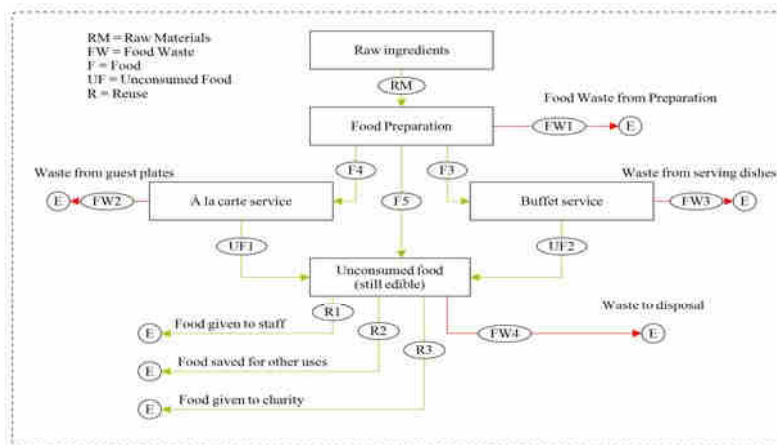


Figure no. 1 Activities investigated in the study

Source: Personal elaboration by the authors

Interview results have been analyzed according to a Qualitative Content Analysis (QCA). The goal of QCA is “to provide knowledge and understanding of the phenomenon under study” (Downe-Wamboldt, 1992), ensuring flexibility to the analysis through the collection of visual and verbal primary data. All answers have been read word by word in order to capture key-thoughts or key-concepts on FW management in the hospitality industry (Hsieh and Shannon, 2005; Kasavan et al., 2019). The results obtained, even if related to a limited sample, are very useful: first, to improve authors direct knowledge about FW phenomenon within the structures; secondly, to discuss possible and future managerial and policy implications. This research is a first part of a larger analysis-which will include a greater number of hotels with different characteristics and located in different parts of the two countries, in order to create a basis to evaluate measures for FW reduction in hospitality industry.

Results

The main step to understand FW drivers is to distinguish between food production and food consumption. Generally, food production leads to systematic FW generation, while food consumption mainly depends on consumer habits (influenced by several variables such as social, cultural, economic factors) and sensibility towards the issue. The two units analyzed present several differences, but also some similarities. Table no. 1, recording them, focuses on internal FW policy, food purchase, meals preparation and disposal. In terms of internal FW policy, in unit 1 (Italian hotel) managers take care personally of the kitchen, coordinating

both departments (management and kitchen). Unit 1 has three main pillars: 1) control of guests' attendance; 2) efficient communication between departments; 3) perishable goods management. Breakfast and dinner are served as buffet, while lunch is à-la-carte. In the buffet organization, the principal steps regard the quantification of guests and the analysis of their nationality, since the quality/quantity of food mostly depends on it. As instance, the management has declared: *"If guests are widely composed by English or German people, croissants are not needed but eggs and bacon are. On the contrary, when Italians book for breakfast, quantity is more important than quality, since Italian people has a strong food culture"*. Unit 1 tries to maximise food self-production (e.g. croissants, cakes, jam or bread) and zero food miles approaches to reduce FW amount and associated environmental impacts and money losses. In unit 2 (Romanian hotel), both managers and chefs consider FW policy a necessity, and declared: *"In the actual context of doing business, a company cannot operate without an efficient management of FW"*. They focus their strategy of collection according to the national rules and are trying to have a sustainable behaviour. According to managers and chefs of the unit 2, the main obstacles in decreasing FW amount are the lack of logistic service to support FW and the lack of reservation forecast. In future, management and kitchen staff are planning to implement a system to facilitate the donation of unconsumed but still edible food and improve the composting system for the inedible fractions. Unit 2 serves breakfast as a buffet. Because the management is aware that this type of serving is FW generating, it makes an effort to mitigate it regularly analyzing the number of guests and their nationality, the season and the special requests. Moreover, the management is also concerned about the behaviour changes in terms of food consumption, to be able to adjust the provisioning quantities.

Table no. 1. Main results from the Italian and the Romanian experience

	Unit 1 (Italian hotel)	Unit 2 (Romanian hotel)
Food purchase	<i>Where?</i> Cash and carries, fresh food markets.	<i>Where?</i> Cash and carries, supermarkets, online, HoReCa suppliers.
	<i>When?</i> Every day.	<i>When?</i> Every day.
Food preparation	Chefs' abilities are important to avoid FW. <i>Waste from preparation</i> is destined with priority to animal feed, then to separate collection.	Three aspects can influence the FW: quality of raw ingredients, kitchen staff and the ratio price/quality. <i>Waste from preparation</i> is for separate collection.
Unconsumed food	<i>Wastes from guests' plates</i> are mandatorily destined to separate collection.	<i>Wastes from guests' plates</i> are mostly used for compost.
	<i>Unconsumed food</i> is mostly donated to the staff.	<i>Unconsumed food</i> is donated to the staff and reused for other dishes.

Source: Personal elaboration by authors

According to food purchase, unit 1 buys food at cash and carries and fresh food markets every day. They declared that: *"There is a strong communication with some sellers. If they have a huge quantity of fruit and vegetables, they ask us to pick it up with a particular discount"*. Unit 1 has created a well articulated network with local fruit and vegetable retailers, implementing a sort of industrial symbiosis. They work together to avoid unsold but still edible product from becoming waste, transforming fresh fruit into jam. In this way, FW is avoided at market places with related monetary benefits for both actors: sellers, who are not

forced to throw away food losing their revenue, and hotel managers, who buy food with an economic *advantage*. Unit 2 purchases raw ingredients and food primarily from Cash and Carries units, supermarkets, online and collaborates with HoReCa suppliers with a daily frequency. They self-prepare food inside the unit both from raw ingredients and edible unconsumed food. At the moment of disposal, managers of unit 1 pay attention to the difference between edible (for humans) and inedible food (for animals). It is possible to distinguish between FW at preparation and FW at consumption. In the first case managers give priority to animal feed (personal knowledge of local breeders) and later to separate waste. In the second case, leftovers from buffet are mainly donated to the staff and/or utilized for other meals preparation. Managers have declared: *“Leftovers are principally donated to the staff. Even if some of them are not on a working shift, we call them in order to ensure that food is not thrown away”*. FW from guests' plates is mandatorily destined to separate collection, even if hoteliers are still skeptical towards it. In unit 2, managers and kitchen staff understand the difference between edible and inedible food and take actions following the national legislation. At the moment of disposal, they give priority to separate collection, then they provide the edible food to the staff and, if possible, use edible food to prepare other dishes. Regarding the inedible fractions, they are mainly used for compost. The authors interviewed also people working at food service (e.g. waiters and attendants), considering their observation skills. They judge buffet-service as more responsible of FW than à-la-carte one, since guests' behavior is generally unsustainable towards the issue. The principal typologies of FW detected are fruits, vegetables and pastries. In addition, according to their perspective, Italian families with children are the less virtuous towards the issue, while old-aged people, foreign guests and business travelers the most virtuous ones. They also consider that an awareness campaign in the hotel would represent a good solution to mitigate FW. In this way, the hotel would inform guests about the consequences of FW stressing the necessity of pursuing a sustainable behaviour. Moreover, foodservice staff propose several actions to mitigate FW that can be adopted by the employees (e.g., depositing or freezing raw ingredients according to label specifications and level of freshness). Combining managers' experience and waiters' observations, the authors asked them to evaluate limits towards FW prevention/minimization and suggest possible solutions (even policies). In terms of limits, they criticize the lack of waste-audit and efficient separate collection, as well as insufficient communication with donation institution and local entities. Moreover, they complain the unsustainable behavior of a huge amount of guests and the lack of awareness/sensitization towards the issue. As suggestion, they propose: a) the implementation of an awareness plan within the unit; b) the introduction of policies which regulate the withdrawal of unconsumed food for human consumption and animal feed. Policies are still missing.

Discussions and conclusions

According to interview results, three critical steps of FW issue must be considered at hospitality level: a) control of guests' attendance; b) communication and transparency with local markets and among department within the unit; c) purchase frequency and perishable food management. Forecasting the number of guests and their nationality seems to be fundamental to avoid FW at food service, as well as implementing transparency and communication outside the unit: an efficient communication between local fresh markets and hotels (or restaurants), and the creation of a preferential distribution channel between them, could avoid the production of FW at distribution stage, since fresh markets could easily sell perishable products at a cheaper price. Such communication must be implemented also between chefs, waiters and managers, since it has been demonstrated that managers who personally take care of the kitchen and are aware of FW issue, coordinating more than one department and knowing exactly how to prepare and to dispose food, are more likely to control and correct FW attitudes, converging towards more sustainable procedures in a shorter

time. Though, several obstacles should be removed, such as the lack of special software to calculate the “*number of guests-food required*” ratio, the lack in separate collection infrastructures, towards which some managers have declared to be skeptical, and the lack in awareness campaign addressed to guests. Some solutions have been proposed and could be deducted from interview results. Good practical examples are represented by the introduction of tasting plates, which allows guests – especially children – to taste small portions of food, since it is known that massive portions containing local food (usually not familiar to tourists) cause more waste. Other possible measures would be the reduction of the buffet room, since smaller areas are more likely to be controlled, or the implementation of specialized software to estimate better the quantities needed (currently carried out with rudimentary management systems). In terms of food leftovers, managers of the units have proposed the introduction of an online platform for donating food both for human consumption or for animals, and suggested the promotion of awareness campaign within each unit. Nowadays, as well known, the hospitality industry is facing a tremendous challenge due to COVID-19 pandemic: a huge numbers of hotels, restaurants and other venues, according to Government measures, have had to temporarily lock their businesses down with a sharp drop in the occupancy rate. Since people are cooking more at home increasing even more FW at households level, FAO has introduced new suggestions to minimize the issue in such critic times (e.g., “ask for smaller portions”, “love your leftovers”, “practice fifo: first in, first out”, “turn waste into compost”). Being the COVID-19 pandemic an economic, social and environmental issue, it could represent a fundamental watershed all around the world. Thus, taking advantage from such disaster, it will be possible to raise awareness on the previous unsustainable behaviours and start a new era of sustainability and consciousness, both at industrial and households level which could contribute to introduce managerial action and consumer behavior, as mentioned, capable of reducing FW generation. In conclusion, the hospitality sector has a significant opportunity to reduce the amount of FW it produces. In this context, some stakeholders in tourism started to take momentum and manage an action plan in order to mitigate the FW in their units and to implement more sustainable behavior. However, despite the lack of regulation, infrastructures, software and the delayed reaction of the European agencies, there have already been launched initiatives from the private sectors that help the industry to adopt measures with a high impact in terms of costs and environment.

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FOOD SECURITY AND FOOD WASTE DURING COVID-19 PANDEMIC

Vera Amicarelli¹ and Christian Bux²

^{1) 2)} *University of Bari Aldo Moro, Italy*

E-mail: vera.amicarelli@uniba.it; E-mail: christian.bux@uniba.it

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Abstract

At the beginning of 2020 the whole world has been infected by COVID-19 virus. An immediate negative consequence, besides population health, has been the high impact over all the industrial sectors, from primary (agriculture) to secondary level (food manufacturing) involving also food sector. Food consumption out-of-home in some country is almost over, while the at-home one reached high peaks like never before. This pandemic so far caused worldwide more than 1.9 million confirmed cases and over 130,000 deaths, and its socio-economics side effects involve social distancing, self-isolation and travel restrictions. To this extend, entire countries are facing lockdowns, thousands of jobs have been lost and several industries at any level as well as schools, hotels, canteens and restaurants, have been closed. This paper, focusing on previous and actual food consumption behaviors, analyzes similarities and differences pre and during pandemic. Subsequently, the authors will try to understand how Covid-19 will influence food waste concern, considering positive and negative scenarios.

Keywords

Food security, food waste, food vulnerability, food resilience, Covid-19.

JEL Classification

Q01, Q5, Q53.

Introduction

Global economy, society and environment face several challenges such as climate change, population growth and land depletion, requiring innovations and strategies in production technologies and consumption behaviors in order to match the 17 international Sustainable Development Goals (SDGs). Among them, main concerns are related to Goal 2 “Zero Hunger”, Goal 13 “Climate Action” and Goal 15 “Life on Land”, with particular reference to water, energy, climate, oceans, science and technological innovation (Kukreja and Meredith 2011; Springmann et al., 2018; United Nations Department of Public Information, 2019). The agri-food system represents a core business for international and national economy and plays at the same time a fundamental role to ensure food safety and food security to human beings

all over the world. However, its management from cradle to grave – from agricultural to consumption stage – requires a large amount of energy and produces at the same time several typologies of wastes, of which food waste represents an increasing quota. Food system utilizes approximately 25 – 30% of global energy consumption and more than 70% of it occurs from primary processing to consumption stage, producing over 20% of total green-house gases emissions (FAO, 2014a; Vourdoubas and Dubois, 2016; IEA, 2019). In terms of FLW, it is estimated that more than one-third of food production is thrown away each year, with wastage-related losses of money and energy which amount respectively to 940 billion dollars (USD) and approximately 38% of energy consumed in the whole food system (FAO, 2014b; Philippidis et al., 2019). With regards to green-house gases emissions, it is estimated that approximately 170 million tons (Mt) of CO₂ are related to European (EU) FLW (3% of global EU emissions), of which more than 45% are registered at household level (Monier et al., 2010; Philippidis et al., 2019). According to Kummu et al. (2017), roughly 25% of global production of food crops in calories is lost or wasted along the food system, with related natural resources depletion of a similar percentage (FAO, 2019a).

In such context, 2020 the Covid-19 pandemic spread all over the world, immediately changing all industrial sectors, from primary (agriculture) to secondary sectors (food manufacturing), impacting to a high degree in food consumption behaviors at-home and out-of-home. According to World Health Organization (2020a), at 16th April 2020 the Covid-19 pandemic results in more than 1.9 million confirmed cases since the beginning of the pandemic and over 130,000 deaths worldwide. In Europe, more than 1 million cases have been confirmed and over 89,000 deaths have been accounted. Italy suffered 15% of cases and more than 23% of deaths (Shaw et al., 2020; World Health Organization, 2020b). Its socio-economic negative side effects involve social distancing, self-isolation and travel restrictions and resulted in entire countries lockdowns, thousands of jobs lost and closed industries (both at primary, secondary and tertiary sectors), as well as schools, hotels, canteens and restaurants. In order to mitigate an economic disaster, Europe has announced a € 1.7tn rescue package destined to the eurozone (Nicola et al., 2020).

This paper, focusing on previous and actual food consumption behaviors, analyzes similarities and differences prior to and during pandemic. Subsequently, the authors try to understand how Covid-19 will influence food waste concern, considering positive and negative scenarios.

Food security and food waste during Covid-19

- *Food Security*

One of the main concerns highlighted during Covid-19 pandemic regards “food security”, which describes a situation in which “all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (Barrett, 2010). Food security is composed by three main components (availability, economic and physical accessibility and acceptability), and its main limits are related to food provisioning disruption (*food system failures*) which occurs often at retail food store, but also in schools, food service institutions, restaurants or deliveries (Chodur et al., 2018; Lagioia et al., 2020). Furthermore, several food supply chain failures spread, in terms of production failure and processing, wholesale, distribution and retails disruption.

The possible effects of available food decrease during pandemic are difficult to specifically predict. However, it is expected that food limitation or lack (accessibility) will cause severe and negative consequences on society all over the world. Moreover, food system is characterized by high levels of interdependencies between multiple systems (such as water, energy, workforce), and a fundamental property of interdependent networks is that failure or degradation in one system may cause the failure of other dependent systems (Buldyrev et al.

2010). This deep interconnection makes food system vulnerable and its resilience is fundamental, so all possible efforts must be done to improve against this and other hazards. Thus, food security is facing new challenges and FAO (2020a) has proposed a “battle plan” for ensuring global food supplies during this pandemic, highlighting the importance of coordinated international policies, global food trade and domestic markets. Governments should take care of children missing school meals and parents losing their jobs, which means reduced incomes. Moreover, global food trade should keep going, since several countries depend on imported food and are vulnerable to slowing trade volumes, without underestimating the key role of domestic markets and smallholder farmers.

• Food waste

Covid-19 pandemic represents a high-risk factor for food waste mainly related to the entire countries’ lockdowns. It has “stopped” all the outdoor food consumption typologies. Company and school canteens, leisure (bistro, restaurants, pubs, café) and hospitality facilities (e.g. hotels, resorts) have been closed. The consequence is a drastically increase in food waste along the whole food supply chain, from agricultural to consumption stage.

In terms of agricultural production, growers and farmers are facing a massive surplus of highly perishable items, such as fruits and vegetables, and impressive quantities of fresh milk have been dumped, due to the sudden demand breakdown by the food service (FAO, 2020b). It has been estimated that the U.S. loss, from March to May, would exceed \$1.32bn. The huge surplus of primary products (fruits, vegetables, dairy products), mainly due to a “disconnection in the food chain”, cannot be absorbed by retail, with the consequence that a huge amount of fruits and vegetables go unharvested and perish on field. Moreover, extraordinary quantities of milk surplus have not been processed, flooding agricultural fields and industrial plants discharges (National Sustainable Agriculture Coalition, 2020; Nicola et al., 2020)

At distribution stage, due to the mandatory closure of catering (e.g., restaurants, pubs, pastry shops) and hospitality activities (e.g. hotels, resorts), in the first weeks (table no. 1) of lockdown the Italian large-scale distributions (GDO) registered higher values than those recorded in the same period of 2019 (17/02-29/03).

Table no. 1 Italian food distribution trends during Covid-19

Week	South Italy	Central Italy	Northwest Italy	Northeast Italy
17/02-23/02	+6.06%	+4.38%	+11.20%	+9.66%
24/02-1/03	+15.8%	+12.8%	+9.9%	+12.8%
2/03-8/03	+20.9%	+12.9%	+7.9%	+7.5%
9/03-15/03	+28.4%	+16.8%	+18.6%	+10.1%
23/03-29/03	+6.3%	+0.4%	+0.1%	+7.0%
Average value	+15.5%	+9.45%	+9.54	+9.42

Source: Personal elaboration by authors based on Nielsen, 2020b

In Italy, several differences have been recorded from North to South of Italy, where an average increase of respectively +9.5% and +15.5% has been registered. However, the highest increase has been performed in the eCommerce, where the purchase of consumer products increased of an average of than +100%, from +56% in the first week to +162% during the last one (Coldiretti, 2020; Nielsen, 2020a, 2020b). The main reasons of such increase are

represented by the “stock-effect”, which is due to the fear of not finding food in the mid-long term, and the “I-stay-at-home-effect”. Thus, high volumes of rice, canned food, tomato derivatives, pasta, flour and yeast have been purchased, but also frozen and “comfort food” (Nielsen, 2020a). To this extend, food manufacturing has faced an increased food demand of approximately 60-70%, adapting processes management and acting improvements in logistics to speed up the flow of good to the stores (Federdistribuzione, 2020). The high volatility in food purchase, both between regions and also within the same geographical area, has made food provisioning quite unpredictable, with strong consequences in the food chain.

At final consumption, food waste during Covid-19 occurs only at-home, being closed all food service facilities. Since the highest amount of food waste occurs at-home (more than 50%) (Moller et al., 2014; Stenmarck et al., 2016; FAO, 2019b), the increase in domestic food consumption inevitably produces a higher amount of food waste. A report produced by National Geographic (2020) in collaboration with the Food and Environment Reporting Network has stated that people are cooking more at home, producing more tonnages of food waste than usually.

Past lessons and future directions for food consumption during Covid-19

In such context, FAO (2020c) has proposed an educational-engaging package to educate people to value food and reduce its waste, giving value to past and present experiences to raise awareness and suggest solutions to reduce food waste at-home. Moreover, Banco Alimentare (2020), an Italian foundation which fights against food waste since 2014, has reported some suggestions for a healthy and balanced food expenditure. Among these pillars, one of the main suggestions is represented by food purchase and meal planning, which could at the same time: a) implement a safe and healthy nutrition; b) help in respecting the rules of social distancing and quarantine; c) reduce the amount of food waste at final consumption.

The starting-point to understand how to reduce food waste is represented by the comprehension of its principal causes. According to literature (WRAP, 2009; Barilla Center for Food and Nutrition, 2012; Papargyropoulou, 2014; Van Geffen et al., 2016; Ravandi and Jovanovic, 2019), food waste is not only the consequence of food disposal and natural events but is the sum of wrong human behaviors during time. Among the principal causes, overproduction and overcooking represent the main reason for “leftovers” generation. Moreover, food waste is caused by wrong interpretation of food label (e.g., mistake between “best before” and “use-by”), lack of cooking skills (e.g. food burned or damaged during preparation), bad food storage according to climate and temperatures and limited knowledge on leftovers and waste management. Of course, such phenomenon depends on socio-demographic variables (e.g. age, gender, income and educational level, country, culture and traditions).

Thus, several individual actions have been suggested by national and international institution (FAO, 2020c; GOV.UK, 2020; Ministry of Health, 2020) and are summarized in table no. 2. Moreover, suggestions against food waste have been recorded also on *social-media* such as Instagram (United Nations Environment Programme, 2020), where people are sharing receipts demonstrating how to make great meals from what is at-home. Such experience could represent an interesting way to understand limits and opportunities of domestic consumption.

Table no. 2 Tips to reduce food waste at-home during Covid-19

Tips during Covid-19	Description
<i>“Ask for smaller portions”</i>	Reduction in portion sizes represents one of the crucial steps towards edible and safe leftovers generation, since it is generally assumed that leftovers in people’s plate are no more edible.
<i>“Love your leftovers”</i>	Leftovers should be reused for further meals or as ingredients for other preparations but should be put in fridge or freezer.
<i>“Shop smart”</i>	Shopping planning helps in better ingredients choice and in meals organization, avoiding over-purchase, overcooking and leftovers.
<i>“Check your fridge”</i>	Fridge maintenance regards essentially its temperature. Food needs to be stored between 1 – 5°C to preserve freshness and quality.
<i>“Practice FIFO: first in, first out”</i>	Food storage and food rotation are related to fridges organization. It is essential to place new products on the back and old ones ahead.
<i>“Understand dates on your food”</i>	Food label comprehension must be clear: “use-by” indicates that food is not safe to eat anymore, while “best before” indicates that food has decreased its quality (smell, taste, texture).
<i>“Turn waste into compost”</i>	Compost production represents one important added-value solution for both inedible and unavoidable food waste (e.g. skins and scraps), both for its economic and environmental implications.
<i>“Sharing is caring: give to help”</i>	Surplus donation to charities or needing people reduces food waste production, but food safety must be ensured.

Source: Personal elaboration based on Amicarelli et al., 2020; FAO, 2020c and Ministry of Health, 2020

Conclusions

After having traced the main factors affecting food security and food waste during Covid-19 pandemic, the authors have observed what happened in the last six weeks of lockdowns in terms of food security and waste. There are no data available to make a comparison between “before” and “after”, mainly because we are still dealing with Covid-19. The sanitary emergency is the goal to overcome and the social-economic catastrophe is the risk to avoid. This means that it will be necessary a long time to by-pass and to learn to cohabit with it. The authors voluntarily have decided to title this section “final remarks” rather than “conclusions” because, at the moment, there are no conclusions but reasonable considerations.

FAO (2020b) reassures that “globally, there is enough food for everyone”, so there is no “need for the world to panic”, but it does not mean that there are no problems. One of the three food security components is guaranteed (availability), the problem is to manage in the next months the other two (economic and physical accessibility and acceptability). The food supply chain is a complex system involving producers, consumers, agricultural and fishery inputs, processing and storage, transportation and marketing closely interconnected. As just mentioned before, the disruption of one of them might determine the stop and/or the collapse of the entire system (food system vulnerability). It is necessary that business managers and policy makers cooperate, with hard work, to make possible that food system will return to its desired (or original) state after being stressed by Covid-19 (food system resilience). In this last consideration it is included the opportunity offered by Covid-19, because society is facing

a cruel “stop” and we cannot lose the chance to start again based on all we have theorized and partially applied in terms of sustainability and circular economy approach.

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EYE-TRACKING EXPERIMENT REGARDING VISUAL AND TEXTUAL STIMULI FOR CELEBRITY ENDORSEMENT

Laura Lazăr¹ and Adriana Opreș²

^{1) 2)} The Bucharest University of Economic Studies, Romania

E-mail: laura_lazar10@yahoo.com; E-mail: adriana.opris@yahoo.com

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Abstract

Celebrity endorsement is nowadays one of the most common instruments in marketing, as they are present in the everyday life of consumers and influence their buying decisions. Their glamorous existence is imitated by many consumers and therefore using them in advertisements plays a major role for the image of brands and products. In order to maximize their success, it is important to have a certain match between the celebrity and the advertised products. Besides the techniques of how the celebrity is incorporated into the advertising is also important. In this paper there are presented the results of an eye-tracking experiment about the reactions of consumers towards products having celebrities as recommenders. There is tested in how far consumers react to visual or textual stimuli related to the celebrity. Results show that celebrity or the textual reference of the celebrity have the highest attractiveness and they are watched for a longer time.

Keywords

Celebrity endorsement, advertising, consumer, eye-tracking.

JEL Classification

M10, M31

Introduction

The celebrity brand ambassadors play a significant role for the image of a brand and also for its marketing strategy. Celebrities have an important impact as a reference group for consumers, by being a role model for these. Their glamorous life, the products they wear, the cosmetics they use are frequently imitated and copied by the consumers. Therefore, the products they endorse are frequently bought by consumers. For this reason, including celebrities in the advertising of products is frequently a key aspect for the success of any marketing strategy. Especially young people are more fascinated of brands and celebrities (Pop and Pelau, 2016) and they look for role models for their existence. Therefore, they can be more easily influenced by using celebrities in the commercials of products. For this reason,

the marketers look for popular, beautiful and famous stars to drive a company's image and their products.

In this paper we present the results of an eye-tracking experiment about the unconscious reactions of young consumers towards celebrities. There are analyzed the reactions towards visual images of celebrities or a textual reference about the celebrities.

Literature review

The role that celebrities play in advertising campaigns is a preferred strategy that marketers pursue in order to generate positive consumer responses (Amos, Holmes and Strutton, 2008; Choi and Rifon, 2012). McCracken defines celebrity endorsers as people who like public recognition and use their influence to promote consumer goods through advertising (McCracken, 1989, p.310). More recent studies come with an updated definition, stating that celebrity endorsers are an agreement between a celebrity and an entity that uses its own influence to promote the brand (Bergkvist and Zhou, 2016, p. 644). Previous research shows that celebrity endorsers have numerous effects, such as advertising impact, brand awareness, brand recall, purchase intention and buying behaviour (Spry, Pappu and Cornwell, 2011). As a result, many companies use celebrity endorsers to create unique ads that can give them recognition and have a positive impact on the brand. McCracken (1989) also noted in his studies that celebrity endorsers are "a present feature of modern marketing". As they have become a source of cultural significance, many consumers tend to care about how celebrities speak, behave and live their lives.

In the associative Network Memory Model, Till and Shimp (1998) suggest that when consumers see a celebrity or a spokesperson supporting a brand, two nodes that were initially separated, become connected in the consumer's mind, a connection that strengthens over time (Jin and Phua, 2014). As explained by McCracken (1989) in the Meaning Transfer Model, when there is a match between the celebrity and the endorsed product, consumers tend to acquire the attributes which are associated with the endorser and transfer them to the product which is being endorsed. In addition, the Match-Up Hypothesis (Kamins, 1990) further supports this explanation and states that if there is a match or "fit" between the endorser and the brand, there is a greater chance that consumers will have a more positive attitude towards the brand, resulting in a higher purchase intention.

The literature on the relationship between an endorser and the product is also robust. Researchers say, for example, that a link between the endorser and a brand is established when the endorser actually has expertise in the field of the product he is supposed to endorse (Till and Busler, 2000; Koernig and Page, 2002). Furthermore, factors like compatibility between the endorsed mark and the endorser's image and physical characteristics are also required (Biswas, Biswas and Das, 2006).

Escalas and Bettman (2005) argue that celebrities are considered a reference group for consumers and are therefore considered to be role models for consumers. Choi and Rifon (2012) also note that compatibility between the endorser's image and the consumer's self-image can increase buying behaviour and purchase intention. This means that if consumers see the endorser as a role model and strive to be like him, they will tend to copy the endorser's behaviour to a certain extent.

Previous studies have shown that the attractiveness of celebrities is an important factor (e.g. Kahle and Homer, 1985; Kamins, 1990), although consumers tend to pay much more attention to celebrities of the opposite sex than celebrities of the same sex (Greene and Adams-Price, 1990). This would lead us to the theory that when advertising to male consumers, it would be advisable to use a female endorser. Nevertheless, opinions are contradictory. Debevec and Kernan (1984) explain that female endorsers tend to adopt a more positive attitude than male endorsers, especially around male consumers. On the other hand, Caballero, Lumpkin and

Madden (1989) explain that same gender endorsers have a greater influence on the buying intention, while Petroshtus and Crocker (1989) say that gender has no influence on it. Communication holds the distribution channel together (Mohr and Nevin, 1990). Communication provides a way of conveying persuasive information through the channels of marketing (Frazier and Summers, 1984), and therefore companies use it as their primary tool and strategy for building their brand image (Erdogan 1999; Chan and Luk, 2013). Since today's consumers are so enthusiastic about celebrities (Schickel, 1985), brands have developed a strategy to use them in order to differentiate their brand from others and create a competitive advantage (Ilicic and Webster, 2015). In addition, consumers' obsession with celebrities has led them to maintain the entertainment function (Choi and Rifon, 2007). One problem that arises when choosing a celebrity endorser is the requirement of choosing the best suited celebrity to support the chosen product. McCormick (2016) explains that the success of an advertising campaign depends on the celebrity chosen to support the brand. He also explains that the image and personality of the celebrity must match the product image to get the right kind of attention, but at the same time be careful not to outshine the product itself. There is a fine line between positioning the product as the center of attention and positioning the celebrity as the center of attention. Therefore, a careful mix of factors and elements must be considered (McCormick, 2016; Pop and Pelau, 2017).

Methodology

We have organized an eye-tracking experiment to measure customer attention. Eye-tracking is a technique which helps researchers analyze and understand an individual's visual attention. Using this approach, one can decide where a consumer looks at an advertisement, how long he keeps an eye on a particular point and it also can track the path of his eyes on the commercial. Through this research, we can describe a user's whole experience when he's watching a commercial. Then we will see what the user cannot explain, because for him it is unconscious. Eye-tracking allows the researchers to monitor the eye location and consider where the individual looks. These modern instruments rely on a process known as corneal reflection. The eyes are illuminated so that their reflection can be discovered and recorded. The eye tracking tool can measure eye movement, and it is possible to accurately determine the position, period, and movement the consumer's eyes. (Rosca, 2017).

In our experiment, we have chosen 2 big pictures that include each 4 pictures from different restaurants and hotels. Each small photo has a celebrity attached, because they represent as follows: the restaurant preferred by a famous actress, the favorite hotel of a celebrity couple, a famous hotel in Paris which is the preferred by all celebrities and the favorite restaurant of a famous actor. The first picture includes only the pictures from restaurants and hotels with the assigned celebrity attached, the second picture is the same, but it includes additional the description for each one of them. The sample of the experiment contained 22 participants, with ages between 20-30 years. The participants had to watch both pictures for 10 seconds one after another, first the one without text description and only after the other one, while the eye tracking data have been registered by the eye tracking tool.

In order to be able to analyze the results we have defined Areas of Interest from each of the analyzed elements of the advertising. The Areas of Interest are subareas from a commercial, which can be selected to measure specific key performance indicators for them. For each of the pictures we have defined the following areas: the celebrity (AOI 001), the picture of restaurant or hotel (AOI 002), the additional text (AOI 003). For each of the 3 defined area, the key performance indicators have been calculated and analyzed.

Results and discussion

In order to quantify the effect of the commercial with endorsed celebrities on the people, we have calculated, with the help of the eye-tracking device several Key Performance Indicators

(KPIs) like dwell time, entry time, hit ratio as it can be observed in table no. 1. These KPIs provide us with useful statistical details about the advertising after viewing it, such as the elements of a picture seen by the participant, the number of participants in the experiment who looked at a certain element, the order of the advertising elements watched.

Table no. 1. Key Performance Indicators for the Eye-Tracking Analysis

		Viewed Time		Viewed Time		1 st View		Visitors	
		ET1 s	ET2 s	ET1 %	ET2 %	ET1 s	ET2 s	ET1	ET2
Photo 1	Celebrity	0.61	0.38	7.61	4.76	1.32	2.49	18/22	16/22
	Picture	1.06	0.87	13.22	10.82	1.76	2.14	18/22	16/22
	Text	--	0.40	--	4.99	--	2.11	--	17/22
Photo 2	Celebrity	1.08	0.65	13.48	8.11	0.90	2.75	18/22	17/22
	Picture	0.87	0.41	10.92	5.12	3.41	3.19	12/22	14/22
	Text	--	0.34	--	4.31	--	4.01	--	15/22
Photo 3	Picture	0.99	1.60	12.36	20.02	1.87	1.76	20/22	17/22
	Text	--	0.37	--	4.57	--	2.32	--	10/22
Photo 4	Celebrity	0.62	0.17	7.78	2.13	2.90	4.29	18/22	9/22
	Picture	0.88	0.69	10.97	8.67	3.53	2.75	18/22	16/22
	Text	--	0.64	--	8.05	--	3.47	--	12/22

Source: Own research results

The dwell time or the viewed time shows the total time watching a certain area of interest, so a certain element in the picture in milliseconds. In our case, we have different situations depending on which of the 4 photo we discuss and also depending on the 2 big pictures, if there is a text description or not. For photo number 1 which includes a restaurant and the face of the famous actress nearby, we have following percentages: AOI 001 -7.61%, AOI 002 – 13.22% in the first eye tracking and in the second one, with additional text description AOI 001 – 4.76%, AOI 002 – 10.82% and for AOI 003 – 4.99%. So, we can observe that in this photo, the participants spent most of their time, watching the image of the restaurant in both cases (AOI 002). This element was the most attractive one for the watchers. It was followed by the face of the famous actress (AOI 001). When the text description was introduced, they watched this description even more then the face of the actress. This means that in this situation the restaurant and it's description was more interesting for the consumers then the celebrity. Photo number 2 has a different situation – this includes a hotel room and the a famous celebrity couple. Here we have following percentages: AOI 001 -13.48%, AOI 002 – 10.92% in the first eye tracking and in the second one, with additional text description AOI 001 – 8.11%, AOI 002 – 5.12% and for AOI 003 – 4.31%. Here the things are clear. Even if there is additional text description or not, the most viewed element from the photo is the celebrity couple (AOI 001). So, in this situation the celebrity beats the product/ service. In photo number 3 we have no celebrity, there is only the image of a hotel room from Paris which is mostly preferred by the testimonials and the text description – percentages are: AOI 002 - 20.02%, AOI 003 – 4.57%, so it means participants watched longer the image then it's description. Photo number 4 includes a restaurant and nearby the face of the famous actor. In this case the results of the KPI's are the following: AOI 001 -7.78%, AOI 002 – 10.97% in the first eye tracking and in the second one, with additional text description AOI 001 – 2.13%, AOI 002 – 8.67% and for AOI 003 – 8.05%. The difference between values is big enough. The situation is similar with photo number 1. The participants of the experiment spent most of their time watching the restaurant and not the celebrity. When the text description appeared,

they watched this 4 times longer than the actor's face. We observe that it strongly depends on the celebrity which represents a brand if it will catch consumer's attention or not.

The entry time or first view shows the order in which a certain AOI from the advertising was observed by the participants. It is calculated based on the average of the entry times in milliseconds (ms) of all the watchers, from the moment the photo is seen for the first time by the participants. As it can be observed in table 2, in the case of photo number 1, most participants saw AOI 001, the celebrity for the first time. It has an average entry time of 1.32 ms. The second most attractive element in this photo is the image of the restaurant (AOI 002), with an average entry time of 1.76 ms. When the text appears, they also watched it with an average entry time of 2.11 ms. So, in the case of first view, the famous endorser beats the image. Photo number 2 shows at follows: people watch first the famous couple with an average entry time of 2.75 ms and only after the image of the hotel room AOI 002 - 3.19 and the text description AOI 003 - 4.01 ms. Again, the famous celebrity couple catch the attention of the participants and not the hotel room. In the photo number 3 they first watched the image of the hotel room from Paris with an average entry time of 1.76 ms and after the text AOI 003 – average entry time of 2.32 ms. In the case of photo number 4 which includes a restaurant and a famous actor nearby, we have following results: most participants saw AOI 001, the celebrity for the first time. It has an average entry time of 2.90 ms. The second most attractive element in this photo is the image of the restaurant (AOI 002), with an average entry time of 3.53 ms. When the text appears, they also watched it with an average entry time of 3.47 ms. This means that in the case of first view, the participants always watch the celebrity first and the represented brand after. So even if they don't spend the longest time on watching the famous testimonial, they do watch it for the first time. These get the consumer's attention first.

The hit ratio is the percentage which tells researchers how many participants from their total number have watched at least once a specific area of interest from the photo. A very important variable for the researcher is the number of participants who have seen the identified elements in the commercials at least once. We have here following situation – photo number 1 – 18 of 22 participants watched both celebrity and restaurant in the first eye tracking, when the text description appeared 17 of them watched this too. In photo number 2 the results say that the element with the most visitors is AOI 001, so the famous couple with 18/22 visitors. Only 12 people watched the hotel room in this case. The famous celebrity hotel reached out 17 views from 22 participants, while the text only 10, so less than a half watched the description. In the photo number 4 with an actors' favorite restaurant, 18 people watched both testimonial and restaurant and after 12 of them also watched the text description. So, we can observe that no element has a 100% hit ratio, no element was watched by all participants.

Conclusions

The results of the research depend on the photo analyzed but we still can take out some conclusions. In the case of the first view, the participants always watch the celebrity first and the represented brand after. So even if they don't spend the longest time on watching the famous testimonial, they do watch it for the first time. These get the consumer's attention first. Regarding the dwell time or the total viewed time, it depends on the celebrity. In the case of photo number 2 which includes a famous celebrity couple, they were viewed for the longest time by the participants. The famous actress and actor from the other pictures didn't make it. Maybe because the participants were not their fans or maybe because the photos of them were smaller in comparison with the one of the famous couple which was bigger sized. So if we take the cumulated time, when the consumers have watched the celebrity, it is definitely longer in case of photo number 2 then the time watching the brand and shorter in the case of the other photos, but it still confirms that the consumers have the tendency to watch for a longer time the celebrities. Therefore, it is important to identify which are the attention-

catchers in an advertising and to design them according to those results. This fact is also confirmed in other researches (Nistoreanu et al., 2019). Celebrities, as many experiments indicates, have a significant key role in gaining interest and influencing buyers. This role of celebrities in marketing may be enhanced and it is therefore important to identify how they should be represented in commercials in order not to overshadow the product being promoted.

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CONSUMERS' PERCEPTION ON FAKE NEWS

Corina Pelău¹ and Mihai Ionuț Pop²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: corina.pelau@fabiz.ase.ro; E-mail: mihai.pop@digitix.ro

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Abstract

Social media networks have changed the way individuals communicate with each other. One of the new features of the communication on social media networks is the user-generated content. Anyone having a social media account can post any type of information on his social account, having the possibility to disseminate different opinions, feelings or comments. The main disadvantage of the user-generated content is the impossibility to check all the information which appear in the online public space. This development has favoured the appearance of the fake news phenomenon, which has affected many domains of our everyday life. In this paper there are presented the results of a research about the attitude and perception of consumers regarding the appearance of fake news. Most of the respondents are aware of the existence of the fake news phenomenon and most of them consider that the development of social media networks has favoured their appearance. The results also show that many consumers believe that others are more affected by fake news in comparison to themselves. Besides fake news is frequently associated with unknown publications and sensational headlines.

Keywords

Fake news, consumer, social media networks, perception, online information source, trust.

JEL Classification

M10, M31

Introduction

The world we live in is marked by extremes, whether we refer to social, economic, ideological, religious or political aspects. Societies around the world are divided as a result of internal or external disputes caused by social injustice, limited access to raw resources, unfair distribution of income and of course the inability of governments to adopt sustainable development policies and programs that directly contribute to the elimination of social imbalances and to the improvement of living standards. Even though, all these negative aspects have always existed, in recent decades we can observe an increase of the

dissatisfaction level of people around the world and an increasing need for action within the civil society. One of the main factors that led to this desire for manifestation and action is related to the emergence of social networks. These allow individuals, regardless of age, gender, educational and professional background or medical condition, to share their opinions, feelings and experiences without any verification or evaluation of the published information. This contradicts the journalistic deontology and the traditional journalistic act. Despite the myriad benefits of social media platforms in informing users, while allowing them to interact based on interpersonal relationships, common interests or ideas, there are also threats associated with these new means of communication. In recent years, many of these have attracted the attention of authorities and institutions around the world. Moreover, some renowned companies managing social media platforms and consumer data have become subject of international investigations which have examined the role of social media platforms in influencing legislative processes, in intimidation or threatening actions directed towards public figures, in attacks focused on certain public institutions, industries or companies, in instigation of street movements or protests and in many other events that endanger the stability of nations. The analysis of these reprehensible events has highlighted the existence of manipulation processes concentrated on disseminating fake news with the purpose of generating an artificial impact on online users. Thus, one of the main objectives on international agendas is related to the development and implementation of the necessary measures in the fight against fake news.

To better understand the origin and spreading patterns of this negative phenomenon, we have set out to conduct a quantitative research in order to test some of the criteria underlying the development of a fake news detection model.

Literature review

The development of social media networks and internet communication has changed radically the way in which people communicate with each other and inform themselves. Moreover, it has eased the way individuals share and develop their knowledge, while allowing them to become news co-creators by sharing news and information on social platforms such as Facebook, Twitter, or Youtube (Hara and Sanfilippo, 2016, Orellana-Rogriguez and Keane, 2018). Besides the positive aspects related to these rapid and transparent means of communication, the trustworthiness of information is one of the main negative aspects related to these developments. Tambuscino et al. (2015) suggest that one of the main problems associated with social media is related to the spreading of inaccurate information, while Katzer et al. (2009) emphasize that the increased number of fake news victims is due to the large amount of information available on social media platforms and in the online environment. Furthermore, the probability of becoming a victim of fake news increases when there is a high uncertainty related to the encountered topic, such as a crisis situation (Spence et al., 2016). In opposition to the era of classic news channels, where each published information had to be checked and assumed by an editorial office, nowadays each author has the possibility to publish online any piece of information he/she desires (Lee et al., 2017). In this new context, Orellana-Rogriguez and Keane (2018) assert that nearly all important news providers use Twitter to promote their published articles with the objective of raising awareness and increasing engagement, despite the concern related to the fact that the journalistic integrity and objectivity may suffer under the pressure of receiving appreciation through social media interactions (de Zúñiga et al., 2018).

Although, individuals perceive online encountered information with mistrust and do not completely rely on it, they still tend to be influenced by the high amount of news available in the virtual environment (Kanoh, 2018). The information overload to which present consumers are exposed to, makes it difficult for them, to evaluate the truth behind each information they receive, especially in the situation in which fabricated stories are promoted with the purpose

of deceiving the public opinion for ideological and/or economic and financial gain (Jang et al., 2018).

The spreading of false information has attracted a lot of attention after the 2016 US Presidential Election and after the 2018 Brexit (Ko et al., 2019). While, Han (2017) suggests that it is impossible to fully prevent the publishing and dissemination of fake news, several researches and methods designed for the identification of fake news, have shown that an important aspect in filtering the real news from the fake ones can be done with the help of the human intervention and algorithms (Figueira and Oliveira, 2017). Therefore, several criteria are needed for the identification of fake news, one of them referring to the trustworthiness of the author, the website or the social media account that publishes a certain information (Pop, 2020).

Several researches have shown that consumers have the tendency to believe the first impression of an item. In the case of information, if the first impression is to trust a fake information, then it depends very much on the cognitive ability of the user, to evaluate and to change the false idea through its thinking and value pattern (Ross et al., 1975; De Keersmaecker and Roets, 2017). On the long term, a higher perceived credibility of an information determines a positive and trustworthy image of the author or of the social media account (named source in the following) which has published the information.

Similar as in the case of traditional media, the readers have the tendency to believe more the authors or publications they know. The higher the popularity and the better the image of the publication, the higher is the probability that a reader will believe the presented information. Taking into consideration the fact that classic publications have been replaced by social media authors (influencers, bloggers), the trust level associated with a piece of news depends to a higher extent to the image of its author or source.

Methodology

The objective of our research is to determine the consumers' general perception on fake news. More precisely, we have analyzed the general opinion on the appearance of fake news, the possible factors influencing fake news and the opinion of the consumer about the possibility of being manipulated through fake news. In order to find out this information, we have applied a questionnaire on a sample of 370 respondents with different demographic characteristics. In this article, we have analyzed with the help of the discriminant analysis in SPSS 20 the differences of perception between consumer younger than 40 years (young consumers) and consumers older than 40 years (old consumers). The second part of the analysis has been focused on the similarities and differences of perception between women and men.

Results and discussion

The results of the discriminant analysis have shown that there are more significant differences between the two age groups in comparison to gender. Both age groups consider that the public opinion has been invaded by fake news, but there is a significant higher believe in the case of the people younger than 40 years in comparison to the people older than 40 years ($F=4.509$, $p=0.034$, $M_{\text{young}}=5.93>5.63=M_{\text{old}}$). In opposition to this, the older generation has in a significant way a stronger believe that social media networks are responsible for the phenomenon of fake news ($F=4.774$, $p=0.030$, $M_{\text{young}}=5.24<5.58=M_{\text{old}}$). Regarding the manipulation done through fake news, there are no significant differences between the two age groups. In spite of that, the people older than 40 years rather believe that they know people who have been manipulated with the help of fake news ($F=0.106$, $p=0.745>0.1$, $M_{\text{young}}=4.93<5.00=M_{\text{old}}$), while the younger consumers believe less that they can be manipulated with fake information ($F=2.395$, $p=0.123$, $M_{\text{young}}=5.07>4.79=M_{\text{old}}$). Younger people also believe that they can identify more easily fake news than older people do ($F=3.984$, $p=0.047$, $M_{\text{young}}=5.35>5.06=M_{\text{old}}$). Regarding the past activity, older people

consider that they have been manipulated by fake news, than younger people do ($F=3.962$, $p=0.047$, $M_{\text{young}}=5.52 < 3.94=M_{\text{old}}$). Both age groups consider with no significant differences that fake news includes sensational headline ($F=0.006$, $p=0.938$, $M_{\text{young}}=5.57$; $M_{\text{old}}=5.56$) and that popular and known journalists don't publish fake news ($F=0.011$, $p=0.916$, $M_{\text{young}}=4.94$; $M_{\text{old}}=4.92$). In opposition to this, young people rather believe that fake news is promoted by unknown publications ($F=4.141$, $p=0.043$, $M_{\text{young}}=5.40 > 5.06=M_{\text{old}}$). There are similar over average results regarding the willingness to pay for access to quality content ($M_{\text{young}}=4.72$; $M_{\text{old}}=4.72$). These results can be observed in table no. 1.

Table no. 1 Fake News perception depending on age

	M_{young}	M_{old}	F	p
Public opinion has been invaded by fake news	5.93	5.63	4.509	.034
Social media platforms are responsible for the appearance of false news	5.24	5.58	4.774	.030
I know people who are victims of fake news content	4.93	5.00	.106	.745
I don't think I can be manipulated by fake news	5.07	4.79	2.395	.123
I can identify fake news	5.35	5.06	3.984	.047
Fake news content includes sensational headlines	5.57	5.56	.006	.938
Fake news content is promoted by unknown publications	5.40	5.06	4.141	.043
Popular authors/ journalists do not write fake news articles	4.94	4.92	.011	.916
I would be willing to pay to have access to quality content	4.72	4.72	.000	.994
I consider that I was the victim of a manipulation through fake news	3.52	3.94	3.962	.047

As many of the recent topics, there are no significant differences in the perception of the two genders. The only significant difference is related to the fact, that women believe more that social media networks are responsible for the appearance of the fake news phenomenon ($F=6.185$, $p=0.013$, $M_{\text{women}}=5.55 > 5.18=M_{\text{men}}$). Men rather believe that they cannot be manipulated by fake news ($M_{\text{men}}=5.08 > 4.86=M_{\text{women}}$), that they can identify fake news ($M_{\text{men}}=5.33 > 5.16=M_{\text{women}}$) and that they know other people who have been manipulated by fake news ($M_{\text{men}}=5.08 > 4.83=M_{\text{women}}$), without having significant differences in comparison to women. Both genders believe that fake news are promote by unknown publications ($M_{\text{men}}=5.32$; $M_{\text{women}}=5.24$) and that they have sensational headlines ($M_{\text{men}}=5.60$; $M_{\text{women}}=5.54$).

Table no. 2 Fake News perception depending on gender

	M_{women}	M_{men}	F	p
Public opinion has been invaded by fake news	5.87	5.78	.443	.506
Social media platforms are responsible for the appearance of false news	5.55	5.18	6.185	.013
I know people who are victims of fake news content	4.83	5.08	1.593	.208
I don't think I can be manipulated by fake news	4.86	5.08	1.744	.187
I can identify fake news	5.16	5.33	1.492	.223
Fake news content includes sensational headlines	5.54	5.60	.132	.717
Fake news content is promoted by unknown publications	5.24	5.32	.236	.628
Popular authors/ journalists do not write fake news articles	5.03	4.83	1.657	.199
I would be willing to pay to have access to quality content	4.77	4.67	.250	.617
I consider that I was the victim of a manipulation through fake news	3.65	3.69	.032	.858

Conclusions

The results of our research show that people are aware of the existence of fake news and the fact that social media networks are responsible for the development of fake news. It is also interesting to observe that older people, who use less social media and women consider them responsible for the appearance of this phenomenon. This fact was confirmed also in other previous studies, where women and older people has reacted less to sensational distorted information on social media (Pelău and Acatrinei, 2019; Tantau et al., 2018). Another important aspect is the fact that people rather believe that others are more easily manipulated by fake content, while especially young people and men consider that it doesn't happen to them.

All categories of consumers/users agree with the fact that fake news include most of the time sensational headlines, they are usually promoted by unknown websites and in the same time they don't believe that popular journalists write fake news. Taking into consideration the fact that known, familiar or popular are subjective concepts, we aim to analyze further in the future the reaction of consumers' to this.

The phenomenon of fake news is and will be a hot topic in the next years, as it affects many domains of our everyday life such as politics, business and economics and also health issues as it was proven in the case of the Covid-19 pandemic. For this reason, it is important to understand and research the factors behind fake news in order to be able to develop algorithms or legal procedures in order to stop the spreading of fake content. From a consumers' perspective, it is also important to raise the awareness of the society of this possibility in order to develop in time cognitive patterns for the identification of fake news.

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BOOKS IN TIME OF PANDEMIA: ROMANIA, ONE WAY AGAIN – FROM PAPER TO INTERNET?

Bogdan Hrib

*¹⁾ The Bucharest University of Economic Studies and National University of Political
Studies and Public Administration, Romania
E-mail: bohrib@gmail.com*

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Abstract

The Book Industry has recovered very hard after the economic crisis of 2008-2012, and the continuing development of the internet technologies have forced the switch to the e-book constantly. And yet after a rapid increase in e-book sales in recent years their market has begun to decline. Under these circumstances, book publishers have been forced since mid-March 2020 to take measures to limit the effects of closing book-stores and libraries. In this paper I will present the main directions for resetting the global and national book market, the possible trends and the forecasted solutions for restarting this industry. In this paper there will be presented the results of a qualitative study about the way in which his crisis was perceived through the perspective of Romanian Bookstagrammers in direct connection with the reactions of the authors (both independent or from the system of large publishers) as well as the publishers. The interviews have highlighted the mode of action on social media, the possible changes in consumption habits: reading and buying books changed after the announcement of the state of emergency.

Keywords

Book industry, e-book, pandemia, paper books, social media, bookstagram, Instagram.

JEL Classification

M10, M31.

Introduction

The rapid increase in the number of readers through massive literacy in the second half of the nineteenth century and the first decades of the twentieth century, the rising standard of living in Europe and the United States, and the rapid development of printing technologies led to the sale of hard to imagine book. The twentieth century has led to the circulation of millions of copies, and successful authors of Paolo Coelho, Dan Brown or Sandra Brown can boast hundreds of millions of books sold from their entire work.

Initially, the advent of the Internet and the e-book seemed to destroy the book market and especially the paper book market. After several years in which e-book sales exploded, the market (especially in countries with a billion-dollar book industry) stabilized and then paper book sales began to grow again. As contradictory as it may seem, the screenings of literary works and the appearance of social media have generated an increase in the sale of books, mainly books on paper. There are still Western countries today, Denmark for example, where the electronic book is difficult to penetrate.

Another example of the victory of books on paper is the opening of bookstores of the Amazon conglomerate, but also the opening in recent years of many independent bookstores all over the world, with a deep socio-cultural role in those communities.

Literature review

The types of book sales methods differ depending on the respective markets, the Anglo-American, the important West-European market, the Eastern European market, Asian, etc., based on geographical and socio-cultural criteria. Over 200 years physical bookstores have replaced the street vendors of the Middle Ages, bookstore chains have developed in the most isolated places in the world, in Iceland for example there is a network- the Eymundsson bookstores, from 1872 (Hrib, 2018).

The world book market has undergone a revolution not only as a result of the advent of the internet and the e-book, but also, perhaps especially, the explosion of new media, especially what we call today – the social media - Facebook, Twitter, Instagram, YouTube, etc. All these new communication channels have changed the balance of power in the book market by tipping the balance from publishers, who have been negotiated to reduce your spending more and more to authors, who are increasingly involved in promoting their own books. If in the early 2000s there was a lot of talk about the profession of employee publicist of the publishing house - an average US publisher who published 75-100 books per year, had 2-3 people employed as a publicist (Warren, 2004), nowadays this occupation has moved to the area of free-lancer and is increasingly in direct contact with the authors.

Directly related to promotion, the sale of books has had to adapt to the speed of information flow and to the methods of rapid distribution through online bookstores and delivery by express courier.

The Romanian model did not copy any of the others, being an uneven mixture of free market with minor financing interventions from the state, uneven and incoherent system with successive changes over the years, because the state has no policies at strategic level to support culture. An example would be that in Romania there is a 5% VAT for books, and in Great Britain the VAT for books is zero.

Cultural, social and economic motivations - the years of dictatorship - with the publishing houses, reduced in number, owned by the state, the small number of titles and censorship - then the economic crises that slowed the natural development of the book market, superimposed over the development of the Internet, they caused a massive fall in the years of the economic crisis from 2009-2012, and the recovery was extremely slow.

Simona Kessler, the most important literary agent in Romania, states: “The book market has remained on an upward trend since 2012 and we could say that only after ten years it has approached the level of 2008” (Chivu, 2019).

The Romanian market did not use in promotion, for example, Anglo-American models, the announcement of Cover Reveal or as the Blog Tour - the succession of cascading reviews to promote a new title. It does not use, partially justified given the small size of the market, the ARC (Advance Reading Copy) model - which means sending a considerable number of free copies before the date of publication (Hrib, 2018) and has a different way of using social media - hardly communicates at all via Twitter, unlike English-language markets where it is used intensively and highly recommended (O’Byrne, 2015), which rather avoids the use of

Instagram. Thus, the built system is extremely vulnerable as external factors, in this case to the economic effects of the pandemic.

Methodology

In order to evaluate the impact of the pandemic on the book market, we chose to conduct a qualitative research on the impact of the pandemic on the book market in Romania viewed through the eyes of Romanian Bookstagrammers. As a research technique in this case I chose to use the interviews sent by email to a number of Romanian Bookstagrammers, female, aged between 16 and 30 years, with over 1000 followers and more than a year experience in social media. In addition, I have selected three important actors with much more experience on several components of social media: well-known personal blogs and participants in activities related to the publishing market (Georgiana Vladulescu, Jurnalul unei cititoare), experience in publishing (translator and book editor: Liviu Szoke, Biblioteca lui Liviu) or social media professional (influencer: Cristian China-Birta).

I have chosen to use for this study also the opinion of an editor (Rebeca Cojocaru, editor in chief Tritonic) as well as that of a bookseller (Augusta Oniță, Libris). The latter should underline or, on the contrary, counterbalance the conclusions drawn from the interview with Bookstagrammers.

The 14 identical interviews (11 Bookstagrammers + 3 experienced actors) have been completed in April 2020. The questions were chosen in order to obtain complete and objective answers. The answers received have different dimensions, some questions were omitted answers and to focus the analysis I decided to avoid excessive enumeration and eliminate words or phrases that are not the subject of research and used only to emphasize sensations or feelings. I have tried to remain fully objective, but I have not used answers that do not relate to certain question or do not contain personal views. I avoided using impersonal or very general answers.

Results

At the beginning of the interviews I have chosen the first question: When did you notice that there is something special on Instagram about the way posts (photos and texts) appear lately? All responses referred to the same time interval: changes in the content of posts on Instagram appeared immediately after the announcement of the state of emergency or at most one week later.

The second question was chosen much more specifically: Is the content of the photos different from the period before the emergency? But the speed of their appearance? All the answers were in the terms "the content is slightly different, but not much". For example: @cristianchinabirta: "Most of the photos are contextual. By this I mean both those in the series stay at home, go out with the dog, go shopping etc." and "the pace has increased" @bookworm_in_a_cozy_corner: "there are accounts that post three times a day."). Mention a response that summarizes the situation: @jurnaluluneicititoare: "Some may feel more creative than usual, but it does not seem to me that their pictures are more elaborate or uploaded. Maybe just experiment more, with new angles or technologies, but nothing necessarily spectacular or special out of the ordinary. After all, it's about pictures with books, I think there is a limit to innovation in the field and it has long been reached on Instagram. I don't think it's different about speed (...)."

The third question has tried to detail the content of the posts: Do you think there are more posts in the period since the announcement of the state of emergency? Are they more elaborate, richer? I insisted with this question trying to find out exactly if there is any relevant change in the way the posts on Instagram were made. But if all respondents agree that there are more posts, opinions are divided on the content: four of the Bookstagrammers think they are richer, one thinks the story part has improved, two think the images are more elaborate,

but the rest think that there are no important differences. Two diametrically opposed opinions should be mentioned:

@emiliasreading: "I don't see a big difference between the posts before and after the declaration of the state of emergency, they seem the same."

@ciobanuldeazi: "They also try to elaborate the topics, they discuss a lot about this state of emergency, they come up with ideas about what people should do more while they are at home, reading being a suggestion not only healthy, but also relaxing."

The following two questions detail the relationship with authors and publishers: How do you feel about the relationship with the authors after announcing the state of emergency? Something has changed? If so, please detail. Three Bookstagrammers have no collaboration with the authors so they did not respond, two consider that the relationship is unchanged, the others said that the authors are much more open to readers and try to be more visible using social media methods:

@ciobanuldeazi: "I noticed many very nice initiatives, such as personal interaction with online readers. They post clips talking about their books, reading an excerpt from them, so they open the door to an open dialogue based on the book."

A response that summarizes the situation is as follows:

@cristianchinabirta: "I see that there are two categories of authors. Some who understood that they have to make an effort to be visible and try how they can (some even spamming) during this period and those who totally laid down their weapons."

The next question is: How do you see the relationship with the publishers after announcing the state of emergency? Something has changed? If so, please more details. This question sought to clarify how publishers are viewed. Six responses stated that they did not notice any changes in the relationship with the publishers. One refrains. Four states that publishers are more "active" and "communicate more with us readers" (@deliaph.reads). Three categorical and detailed answers consider that the relationship has changed substantially in a negative way:

@bookworm_in_a_cozy_corner: "The relationship with publishers is different, in the sense that most have stopped collaborating with various bookstagram accounts or blogs, and, for now, focus only on online orders and opt for personal promotion, thus avoiding exposure of their employees."

@citesc_cu_sufletul: "The relationship with the publishers has changed, unfortunately, and this is understandable, considering that the situation is critical. Many publishers have stopped collaborating and are now focusing strictly on online sales."

@liviuszoke: "I saw several publishers complaining that the Romanian book market, which is so fragile and unstable, has collapsed; Not surprisingly, the economy itself has collapsed, and not just ours, and when unemployment and recession are announced, people no longer think about buying books, but whether they will have money left over from bills next month or if they will still have a job; another problem is the eternal division between publishers, everyone does what they do on their own, there is no closeness, openness, desire to collaborate, creating a kind of union to represent their common interests in the relationship with partners; as in most cases, we seem like a divided people, whose eternal motto seems to be let me escape, that's all that matters, the rest, their problem."

In conclusion, opinions are obviously divided and reflect the personal relationship, of course built before the state of emergency, of each Bookstagrammer with the book market and a number of publishers. We cannot thus issue a generalizing statement.

The next question is: Are you reading more books now? Why? What genre? The answers were almost unanimous (9 of them): "I read more because I have more free time and I did not change my preferences". Three other answers stated: "I think I read the same as before", justifying the fact that they kept their jobs and attended school classes. Two answers were extreme: one answer categorically confirmed the hypothesis: @cristianchinabirta: "Yes,

almost double. I stayed on the same reading habits, though. Contemporary Romanian authors, personal development, psychology, anthropology, history and fiction from various countries.” And another refuted the hypothesis of the article: @jurnaluluneicititoare: “My feeling is that I ended up reading less than before, because it's much harder for me to sit still and be distracted by reality, when the reality these days is quite full of insecurity and fear, feelings which require quite a lot of attention.

We can conclude that the changes are predictable by the appearance of extra free time, but they will not cause a long-term change in consumption habits, because after lifting the restrictions the extra free time will disappear.”

The answers to the question “Are you buying more books now? Why? What genre?” were unanimous: No. There were two arguments: the financial one and I present the defining one: @bookworm_in_a_cozy_corner: “When it comes to buying books I'm on standby, financially I can't afford to indulge as I normally would. Although all publishers have tempting offers, unfortunately I have to refrain from buying books, otherwise I would not be able to handle this critical period.” And the other was related to the existence in the library of many unread books and to the opportunity now arising to read these volumes: @one_girl_thousand_books: “On the contrary, we have reduced book purchases. I had time to reconnect with my library and began reading unread books.”; @de_vorba_cu_cartile: “I don't buy more books now, I was ready and I have about 60 unread books in my library.”

It is important to note that none of the interviewees stated that the decision not to buy books was determined by the fear of being infected by physical objects that could have been in contact with sick people on the distribution route: courier, distributor, publisher .

The following answers have been given to the question “What kind of book are you buying: paper book or e-book? Has anything changed in your purchasing decisions after announcing of the state of emergency?” The answers to this question are unanimous: I buy a book on paper and very rarely or occasionally an e-book (@one_girl_thousand_books: “I buy physical books, because I like to have them in my library at home...”). It is worth mentioning an answer that can anticipate future consumption habits in the Romanian book market: @jurnaluluneicititoare: “I almost never order an e-book and I do not plan to do it in the near future. Of course, if the market changes and the news that interests me will only come out in this format, I will adapt too (...).”

Conclusions

Following the interviews, we can draw the following general conclusions. Although some accounts posted photos more often and with much more contextualized content, the changes were generally minimal. For various reasons, the lack of time or the mental state required for reading did not substantially increase the number of books read during this period. The consequences have been seen in the sales, as there was no substantial increase in sales volume, with most respondents considering that they had enough books previously bought to read. Besides, there are no changes in consumption habits regarding the type of book purchased. All the respondents prefer paper books, not e-books and they have not changed their preferred literary genres.

For the future or the a analysis of the Aftermath of the Romanian Publishing Industry, I have finally kept the answers to the last question, which, I consider as a possible radiographic answer to the title question: How would you assess the state of the book industry at this time from your position? Do you have any ideas to change / support / develop the book industry right now? The answers are also to this quasi-unanimous question: the state is “critical” (@citesc_cu_sufletul, @liviuszoke). Expressions are used such as: “large losses”, “postponement of appearances”, “the industry is on hiatus”. @citesc_cu_sufletul: “The only possibility to sell more books remained online, and my proposal would be to continue with different offers to encourage readers to continue buying books.”

An important clarification for this comes from @one_girl_thousand_books: “At the moment I think the book industry is not a priority for many people.” There are three answers to the question of the support that the state should give to the book industry:

@jurnaluluneicititoare: “At the moment, the only people the industry can rely on are hardcore readers, those who have read anyway before and will always do so. It does not seem to me that new people can be attracted to reading during this period (...) Well, there is also the option in which the state could support the book industry. I don't think he will.”

@liviuszoke: “I would suggest that the government pay more attention to education and culture (...).”

@ciobanuldeazi: “...we hope that the Government will also get involved, the literature being absolutely necessary for both students and adults, and in these months the book needs financial support more than ever (...).”

A summary of the current situation, as well as the deeper causes for which this point has been reached, provides the following answer:

@cristianchinabirta: “This crisis, like any crisis, does not only show us the current situation, but especially how it came at this moment. In other words, the players in the book industry who did not have a strategy of building a strong brand and creating a community around the brand, now find themselves isolated (much like they were, in fact, in normal times, only then they did not they realized). Also, those who have built a professional digital presence over time, now get benefits (and are about the only ones). Suggestions: don't forget that any book is a product and that every product needs marketing. Better a poor horse than no horse at all.” For a point of view from inside the industry I received an answer from Rebeca Cojocaru, Editor-in-Chief of Tritonic: Do you think that publishing should be suspended during this period? If so, why not? She answers that “Editorial activity should not be suspended. It is a time when we should reorient ourselves. A period in which we can prepare new projects, to announce new titles, to print new titles, to try to get closer to readers and more, to honor online orders. (...) We cannot stop now, because this period will finally end and we must make sure that we have books that we can sell when everything reopens. At least it's a way to maintain the flow of knowledge.”

For an opinion on the distribution situation, I turned to Augusta Oniță, Libris Acquisition Director: “It is difficult to say what will happen in bookstores in Romania in the period after the cessation of emergency measures, it is very possible that readers will return gradually and initially in a smaller number. The cultural events that were until now part of the daily life of our bookstore, most likely will not be able to resume soon, and this clearly affects the dynamics of visiting and buying books in the short and even medium term. The book market is a very sensitive market in Romania, I think there will be a challenging period for everyone, not only for those who work in the field of books, but that does not mean that we will not find solutions to recover. “

Regarding the possible International tendencies, foreign publishers or authors have the same views, like the feature where Clemence Michallon discusses several authors whose books should have appeared in the same period, even if releases, including promotional tournaments, are suspended, books published as e-book versions or can be pre-ordered on the main online platforms (The Independent, 2020). It is obvious that not being a strictly necessary product, the paper books will not be distributed with priority during this period, but professional readers can support the market through paid pre-orders.

An option in which publishers would completely abandon paper books cannot be taken into account - in relatively small markets as the number of speakers of that language is not justified a translation only for a number of e-books sold at a much higher price. Also, the release of some or all of the free digital volumes would mean an exploitation of the author's work, as stated by Douglas Preston, president of The Authors Guild (New York Times, 2020) referring to the National Emergency Library initiatives, which digitized volumes still under copyright.

In conclusion, James Daunt, CEO of Barnes & Noble and managing Director of Waterstones, the largest retail bookseller in the UK, states “There are all sorts of reasons to think that the book industry is very much more resilient than many industries.” (Library Journal, 2020)

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WOULD SMART SOLUTIONS LEAD TO SUSTAINABILITY WITHIN UNIVERSITY?

Irina Maiorescu¹, Gabriel Cristian Sabou² and Răzvan Daniel Zota³

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

E-mail: irina.maiorescu@com.ase.ro; E-mail: gabriel.sabou@com.ase.ro;

E-mail: zota@ase.ro

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Abstract

This article starts from an analysis in the scientific literature of sustainable university and of smart university particularities in relation with sustainability, our main purpose being to identify whether Smart technologies are vital for the sustainable development of universities. By using a quantitative research, online questionnaire based, we evaluated the usefulness of various potential smart solutions among more traditional solutions, in the sustainable development of the university. 292 students enrolled in Business and Tourism Faculty – Bucharest University of Economic Studies provided answers to the questionnaire, during the first semester of 2019-2020 academic year. The analysis presents partial results of this wider research, answering to the objectives set of the current paper. Thus, our findings show that students, although they consider useful an implementation of various Smart solutions for the sustainable development of their university, they also consider that these are not more important than “traditional” ones, such as selective recycling or studying more relevant subjects for sustainability. Starting from the findings of this research, recommendations for possible future development of Smart sustainable solutions are made.

Keywords

Sustainable university, smart university, smart campus, student’s behavior.

JEL Classification

I23, I29, Q56

Introduction

Our information society is becoming every day “smarter”, in terms of technology, transforming little by little into a Smart society. According to Morze et al. (2017), smartness “is the ability to interact with the environment and adapt to it” and communities - such as cities, companies, universities may become Smart, as the continuous development of ICT provides complex adaptive solutions for their needs. Thus, a Smart university focuses on developing its technological infrastructure with the purpose of improving the quality of the education provided, but in the same time, the integration of Smart ICT solutions will help all

academic, administrative and social processes (Morze et al., 2017). In general, smartness is differently perceived by researchers, businesses, authorities and other stakeholders (Al-Nasrawi et al, 2017). Nevertheless, there is a common point for scholars, when defining what is Smart: namely, the presence of ICT devices, sensors and software, working together to ensure improved experiences to both individual users and to community. Thus, in describing a smart campus, many researchers emphasize the various smart technological constructs, without offering a holistic vision about how these are connected to the “wider objectives of the academic institution”. (Vasileva et al, 2018). However, in what concerns urban communities – cities, more and more studies tend to associate the concept of smartness with sustainable development, as sustainability should be our society’s primary goal (United Nations, 2015). Thus, smart cities are aiming to become smart sustainable cities and, consequently, universities should try to become not just smart universities, but smart sustainable universities.

In the first part of this article, the concepts of smart campus and sustainable university are discussed, through a review of the scientific literature. Following these, in the second part of the article, the objectives and the corresponding results of a quantitative research are presented. The general aim is to identify if focusing on building various smart solutions for sustainable actions within university is perceived more useful than acting for sustainability in a traditional manner.

Review of the scientific literature

Universities have a fundamental role in shaping the minds and skills of future generations, in orienting them towards sustainability, as campuses provide an “unique socio-cultural setting to promote sustainable development in practice.” (Colding and Barthel, 2017)

The implementation of all three sustainability pillars (economy, society and environment) in university campuses is difficult to be performed in an integrated manner, because there are no standard guidelines about how to understand sustainability here, nor there is a standard set of indicators to be looked at and measured.

Of course, there are efforts on behalf of most prestigious universities to act sustainably and, for this purpose, they use either their own sustainability framework or one of the proposed models, such as in UI Green Metric World University Ranking (UI Green Metric, 2020) or Green Office Model (Green Office Movement, 2020). In general, after a thorough reading of scientific literature, we can say that the sustainability within university refers to:

- Educating students and community through the proposed curricula about sustainable development
- Research, as means of answering important social questions and solving social, economical and environmental problems
- Operations: minimizing the environmental effects and even achieving zero footprint for campus operations
- Community: students, professors and administrative staff are encouraged and empowered to act sustainably within university in particular, and for the welfare and ethics within society, in general
- Governance: the way management makes sustainability a priority for the whole university campus.
- Collaboration with businesses, authorities and NGO’s for community sustainable projects.

Most often, the first measures universities take towards sustainability are oriented towards the environmental component (Sonetti et al., 2016). Because a smart campus can manage data more efficiently than traditional campus platforms (Yang et al., 2018), the result is delivering higher quality services, the protection of the environment and a reduction of the cost

(Alghamdi and Shetty, 2016). Thus, many universities have implemented Smart solutions for tracking, analyzing and adapting the consumption of energy and water to the real needs of the campus (Gomes R. et al., 2017; Stavropoulos et al, 2016)

However, smart systems can be used not only, for reducing energy and resources consumption or for monitoring environmental parameters like temperature, humidity, light, noise or the level of air pollution in campus spaces. There are also other areas of use, such as knowing the traffic of people within university and controlling the academic flow of professors and students in classrooms, library and between various buildings of the campus (i.e. analysis of movement patterns, places with higher people traffic, stay time in various places etc.). The smart use of ITC for monitoring such processes helps the campus management and leads to better adapted conditions and services (Alvarez-Campana et al, 2017). Nevertheless, transforming into a smart university needs the involvement, commitment and feedback of all stakeholders: students, professors and university administrative staff, parents, management team etc. (Dong et al., 2020).

Research objectives and methodology

From our literature review research, we could see that, although there are sustainable universities and universities that are using smart technologies for various areas linked to sustainability, Smart is not a mandatory component in building sustainability within university. Also, as we agree with the fact that students are very important stakeholders of the university. As such, our set objectives connected to the subject of this paper, that we aimed to reach through our quantitative research were:

O1 – to assess students' perception about the usefulness of potential Smart elements as compared to the traditional elements in building the sustainable university;

O2 – to analyze students behavior in what concerns their tendency using smart mobile phones or computers for communicating or getting informed in various situations;

Through our first objective we seek to obtain useful information about the opportunity of reaching sustainability within the studied university by focusing on Smart technologies, while our second objective provides information for the design of future smart systems and apps to be used by students.

Thus, for meeting these objectives, during October – November 2019, we distributed online a survey - questionnaire based, to students belonging to Business and Tourism Faculty of Bucharest University of Economic Studies. We considered that the most relevant answers in terms of our set research objectives, could be obtained from students currently enrolled in the 2nd and the 3rd year of Bachelor program and from those attending a Master program, because they already have the experience of at least one academic year to familiarize themselves with the subjects studied or to be studied, with campus life and with the notion of sustainability. The method used for sampling was simple random sampling, as we randomly selected 360 students from various study groups within Business and Tourism Faculty, who were solicited to answer to the questionnaire posted on Google Forms. We had 292 valid responses, the associated margin of error for this sample being $\pm 5.73\%$, using a 95% confidence level. All respondents have ages between 19-25 years.

The results discussed in the next part are partial findings of a more extensive analysis of the research and they address the issues discussed in this article, answering to our set research objectives, as mentioned. Data were exported from Google Forms and processed in Microsoft Excel, then statistically analyzed with Minitab software.

Discussion of the results

Referring to our 1st objective, we investigated the way students evaluate the usefulness of various potential solutions for improving university sustainability, among which Smart ones were suggested. The answers, on a scale from 1 to 5, where 1 is very little usefulness and 5 is

very much usefulness, are shown in figure no.1. As it can be noticed, for each item to be evaluated, most of the respondents gave either a positive or a negative opinion. There are very few answers with moderate opinion about the usefulness (evaluation with 3). The distribution of answers for each of the potential solutions indicates a majority of positive opinions (evaluations with 4 and 5). As a matter of fact, by analyzing the median of evaluations for each of these potential solutions for improving university sustainability, we found these situated at 4, on a scale from 1-5.

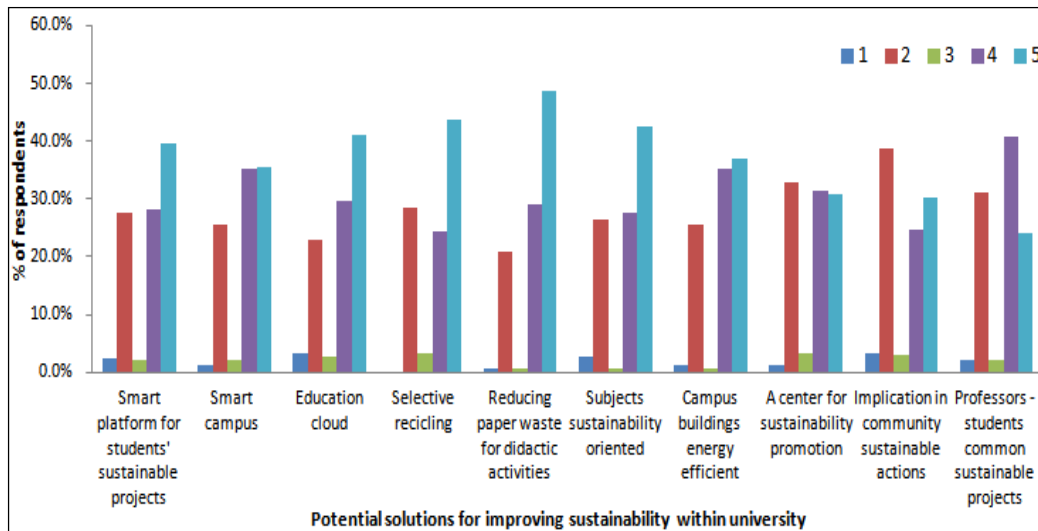


Fig. no. 1 Students' evaluation of the usefulness (1 – very little usefulness, 5 – very much usefulness) of various potential solutions for improving university sustainability

We also wanted to see whether there are differences between these answers and as such we tested the median against higher than 4 and lower than 4 value.

The results of sign test for median = 4.000 versus median > 4.000 are presented in table no.1 below, for each individual item.

Table no. 1 Sign test for median = 4.000 versus median > 4.000 of respondents evaluations for usefulness of potential solutions to sustainability

Potential solutions for sustainability	N	Below	Equal	Above	P	Median
A smart platform for students sustainable projects	292	94	82	116	0.0736	4.0
Smart campus	292	85	103	104	0.0952	4.0
Education cloud	292	85	87	120	0.0088	4.0
Selective recycling inside university	292	93	71	128	0.0111	4.0
Reducing paper waste for didactic activities	292	65	85	142	0.0000	4.0
Subjects sustainability oriented	292	87	81	124	0.0066	4.0
Campus buildings energy efficient	292	81	103	108	0.0293	4.0
Professors-students common sustainable projects	292	103	119	70	0.9951	4.0
A centre for sustainability promotion	292	110	92	90	0.9312	4.0
University implication in community sustainable actions	292	132	72	88	0.9988	4.0

As it can be noticed (table no.1), the $p\text{-value} < 0.05$ is for campus buildings energy efficient, subjects sustainability oriented, education cloud, selective recycling and reducing paper waste. When we tested the median= 4 versus median< 4, we obtained a $p\text{-value}$ of $0.0075 < 0.05$ for Professors-students common sustainable projects, all others being above the 0.05 cut off. We can say that Smart solutions are not necessarily better appreciated by students as useful for sustainability. Education cloud involves a decrease of the amount of paper used for study materials, projects and homework; hence its general slightly better perception corresponds to the reduction of paper waste for didactic activities. As a matter of fact, these two items directly correlate, the calculated Spearman coefficient being of 0.585.

We also wanted to see if there is a correlation between students' evaluations for Smart potential solutions usefulness and their evaluation about the quality of education in using ITC they receive in University. The evaluation of education is a little right skewed, the median being situated at 3, on a scale from 1-5 (1 –very poor education and 5 –very good education). The $p\text{-values}$ for all Spearman coefficients between evaluations of ITC education and the evaluations for Smart solutions usefulness were >0.05 , indicating no correlation. There were found no associations between gender or year of study and the usefulness evaluations through Chi Square Test, $p\text{-value}$ being in all cases >0.05 .

In what concerns student's behavior when learning, communicating or getting informed in various situations, their tendency to use the smart mobile phone or the laptop/computer is shown below, in figure no. 2.

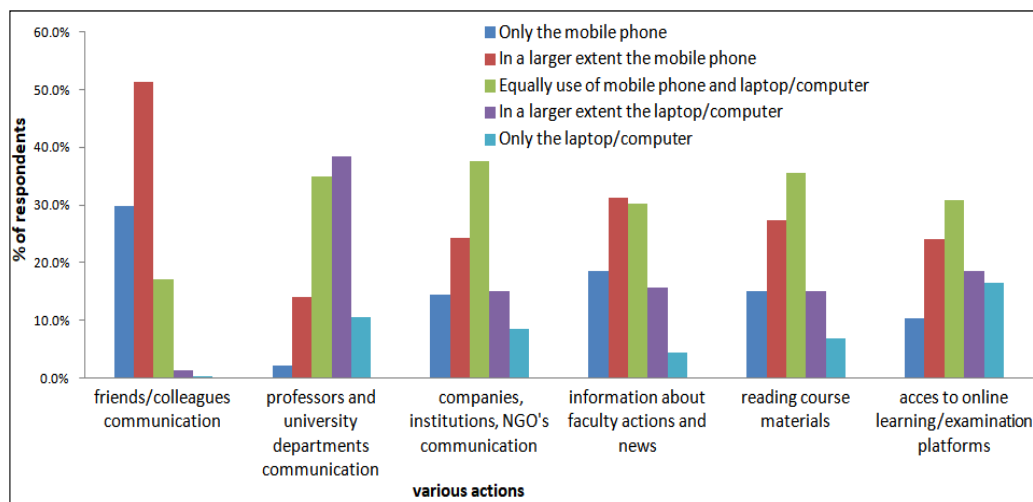


Fig. no. 2. Students behavior about using mobile phone and laptop for various actions

While it can be noticed that mobile phone is rather used for communicating with colleagues, for getting informed about faculty actions, for reading course materials and even for communicating with companies and other institutions, it is surprising that the communication with professors and university departments is rather made through laptop. There were found no associations between students' behavior in using mobile phones/laptop and gender when using Pearson Chi Square test for association.

Conclusions

It is still difficult to assess the degree of sustainability of universities, since there is no standard framework to define and to measure it in an integrated manner. There are various models suggesting criteria and indicators for university sustainability, but none of these include the use of ITC technologies. There are universities that use smart technologies in some of their

processes that help indeed improving the campus sustainability, especially in the environmental area, but not only. Our research aimed to identify whether students – important stakeholders in building the sustainable university, perceive potential smart solutions as more useful than traditional activities linked to sustainability. The results show that, though assessed as useful, they are not seen as more useful. Of course, research results are specific to the particularities of the sample, hence they should be regarded through this limitation. A future development of smart solutions within university aiming to improve some areas of sustainability should take into consideration students' behavior of using ITC. Our research shows that students change their behavior when reading and communicating electronically in various situations, in what concerns the devices they use. Of course, Smart solutions will not bring themselves sustainability, but they will greatly help to improving it..

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ADVANTAGES AND DISADVANTAGES OF THE INFORMAL SECTOR ENTREPRENEURSHIP VS EMPLOYMENT

Cristian Marinescu¹

¹⁾ The Bucharest University of Economic Studies, Romania

Email: cristian.marinescu@macroeconomie.ro

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Abstract

The informal sector is an important part of economy. The influence of the informal on the evolution of the economy can be positive, negative or a mixed between them.

Most of the time, the option for informality of individuals is based on a cost-benefit analysis of the informal sector, but there are also situations when choosing the informal sector is the only option that some individuals have for survival.

In this paper we want to show, starting from different existing studies in the field of informality, what are the advantages and disadvantages for which individuals opt for the informal sector of the economy, both as employees on the labor market and as entrepreneurs and if would be beneficial for the economy reduction or expansion of this sector of the economy.

Keywords

informal sector, informal employment, dual economy, employment in the informal sector.

JEL Classification

E26, J46, J48, J24.

Introduction

The term "*informality*" came into economic theory in the 1970s, when Keith Hart first used this concept in a paper discussing urban occupation in Ghana. From then until today, the concept of "*informality*" has evolved from "simple trading activities carried out by the poor population from developing economies" and to the concept of "*informal employment*", approached through the jobs or workers perspective and that of "*employment in the informal sector*", approached through the employer perspective.

The duality labor market, formal and informal, is a characteristic of any labor market, whether we refer to a developed or a developing economy, the difference between them being given by the reason that determines individuals to opt for informality in the sense that, in the developed economies the option for informality is given by the desire to make more profit,

and in the developing economies, informality is, most of the times, a safety valve, being the safe alternative for certain individuals ensure existence.

Informality appears in the relationship between "state", as a regulator, and the other participants in the economic life, respectively "entrepreneurs" and "individuals", when they act as traders (entrepreneurs) and suppliers of labor force (individuals) and not conforms to the legal norms, established by the "state".

Except the situation when informality is the only alternative, the option for informality is based on a cost-benefit analysis, more precisely an analysis of the advantages and disadvantages of the informal sector of the economy. Thus, both the entrepreneurs and the labor force providers make a cost-benefit analysis, taking into account the financial benefits they obtain by opting for informality, but also the risks they are facing leaving the formal sector of the economy. The most important risks to the participants in the economic life leaving the informal sector of the economy are: the risk of penal liability before the law (in the case of companies or entrepreneurs) as the informality is, in fact, tax evasion, and this is considered penal liability in the law of majority countries of the world and the risk of not benefiting from the social protection system offered by the state to formal workers, in the case of individuals who choose to work informally.

Although most economists have seen "informality" in quantitative terms, considering it to be a sector where productivity is low, earnings from work are small, commercial activities are conducted without benefiting from the advantage of modern technology existing in the formal sector, there are also authors (Hart, 2011) who interpreted "informality" from the perspective of absence or presence of the "bureaucratic" form.

Structure of the informal sector of the economy

It is essential that before we discuss the basic issue of this paper, namely the advantages and disadvantages of the informal sector of the economy, we should make a brief presentation of the informal sector, both from point of view of employees (jobs perspective) and point of view of entrepreneurs (production units perspective).

In a general sense, the profile literature uses various concepts to define informality, such as: underground economy, dual economy, tax evasion, and from the labor market perspective "informality" is found in economic theory under several names, among which we mention: Informal sector (Hart, 1973); Undeclared work (European Commission, 1998); The informal economy (BIM, 2002); Employment in the informal sector and informal employment (BIM, 1993/2003); Invisible or hidden occupation (OECD, 2004).

The concepts of "*employment in the informal sector*" and "*informal employment*" have been proposed by the International Labor Office (ILO) to define informal work both from the entrepreneur perspective (employer/enterprise) and from the employee perspective. Thus, the term "*employment in the informal sector*" appears in 1993 and defines the informal work in terms of production units characterization (approaching from the production/enterprise perspective), and the term of "*informal employment*" appears in 2003, defining informal work through the individual perspective, that is, the workforce providers (approach from the workplace or employee perspective). (ILO, 1999; 2012)

According to the resolution adopted by ILO at the 15th International Conference of Labor Statisticians, it is recommended to classify informal activities into two categories, namely: on the one hand the informal activities of the entrepreneurs, and on the other hand the activities of informal workers (individuals providing labor force), thus developing the concept of "informality" (Solorzano and del Miguel, 2003).

Once we have clarified from a terminological point of view the concepts of "informal employment" and "employment in the informal sector", the conceptual aspect of the informal sector remains to be clarified. The informal sector of the economy can be terminologically associated with the concepts of underground economy, dual economy or tax evasion.

According to the literature, "*Underground Economy*" can be defined as "representing all those economic activities that are taken into account when establishing the gross national product but which are not registered" (Feige, 1989, Schneider, 1994; Frey and Werner, 1984; Herald and Lubell, 1991) or "representing the production of goods and services of the market, whether it is produced legally or illegally and which is not taken into account in the official estimates of gross domestic product" (Smith, 1994).

Concerning to the informal sector of economy, seen as "evasion", the context in which evasion occurs must first be specified. In any economy, irrespective of its degree of development, there are three categories of participants in the economic life, namely: the *state* - which appears in its double quality, respectively market regulator and consumer or service provider; *companies or entrepreneurs* - as economic agents focused on profit and *individuals* - who appear as labor force suppliers but also as consumers of goods and services. There are interdependence relationships between the three categories of participants in the economic life (Marinescu, 2018).

In the specialty literature, there are considered to be three types of relationships between entrepreneurs (firms), individuals (labor force providers) and the state (regulator), namely: opportunistic evasion, defensive evasion and passive evasion, defined as follows (Perry and Maloney, 2007).

"Opportunistic evasion" refers to the law elusion subtracting from the payment of taxes or fees and can be: illegal (when entrepreneurs engage in non-punishable activities) and unprotected (when workers, especially from developing countries, do not are protected by labor law). Firms that practice this type of evasion, bypassing labor law, implicitly create a dual labor market.

"Defensive evasion", which refers to elusion of taxes and fees due to the overly burdensome tax system, which basically forces taxpayers to enter into a defensive evasion. Also, the high registration costs corroborate with the bushy legislation existing in many states, especially in the developing ones, makes that entrepreneurs give up to formal activities and prefer the information sector.

"Passive evasion" refers to the kind of informality that entrepreneurs choose it because they do not consider that they are part of the formal economy, because they do not need the state services for their activities, which is why they prefer to remain in the informal sector of economy, and employees (labor force providers) consider it a temporary "safety net", sometimes even more important than access to social services specific to the formal sector of the economy.

According to the specific literature (Perry and Maloney, 2007; Ruffer and Khinght, 2007), the informal sector of economy is structured as follows: *the workforce*, which includes workers, especially the elderly, young people and women, who would prefer a job in the formal sector, but they are unable to find one; *entrepreneurs*, ie individuals who have voluntarily left their jobs in the formal system to start a business on their own, where they are their own bosses and where they can earn higher incomes and, at the same time, avoid paying taxes and fees; *small companies* that, on the one hand, do not have the intention or the potential for growth and, therefore, do not want and not need to interact with state institutions, and the other hand they would like to develop, but are hit by regulations and excessive costs, imposed by the formal system; *companies in the formal field*, which, although registered legally, partially carry out informal activities, in the sense that: declare lower incomes to pay lower taxes or do not draw up employment contracts for all employees, or declare amounts lower than they offer them in reality, thus avoiding the payment of social insurance due (Marinescu and Valimareanu, 2019).

The structure of the labor force operating in the informal sector of the economy consists of two categories, namely: entrepreneurs (or self-employed) comprising: small family firms, liberal professions (accountants, doctors, lawyers, etc.), as well as those individuals with some

professional skills and who carry out activities on their own (artisan workers, tailors, hairdressers, etc.) and employees that include: workers in domestic work, unskilled workers in small businesses, workers in large firms that work without legal forms, contract workers who do not receive a regular wage, but are paid in percentage, on commission (Perry and Maloney, 2007).

Advantages and disadvantages of the informal sector

There are two opinions about informality, almost antagonistic, that have been shaped over time. One (older) who argues that the informal sector is characterized by poverty and that it represents a source of non-productive workforce and a second (newer) opinion, which states that this sector may have potential for accumulation and development.

Starting from the two points of view, a summary of the different studies on this topic will show us the advantages and disadvantages of the informal sector, and whether a reduction or expansion of this sector would be beneficial for the economy.

In the literature, the advantages and disadvantages of the informal sector are approached from three points of view: economic, social and political (Tanzi, 1982; Harding and Jenkins, 1989; Portes et al., 1989; Feige, 1989; Renooy, 1990; Gerxhani, 2004; Chen, 2016; Fields, 2008; Reynaud, 2002).

In this paper we will address the three criteria, by which the advantages and disadvantages of the informal sector are defined, both from the point of view of the entrepreneur (the employer) and from the perspective of the employee (of the labor force provider).

- *The economic criterion*

The economic advantages and disadvantages of employment in the informal sector of economy are different, depending how individuals relate to economic life, as entrepreneurs (employers) or as workers (employees).

From the entrepreneur (employer) point of view, the main economic advantage is given by the greater profit obtained from the informal activities, by no taxes payment and this is achieved by no income declaring, but also paying "to the black" workers, employed without legal forms. These advantages allow informal sector entrepreneurs to have lower production or operating costs than those in the formal sector, and these savings on the one hand can be used in development investments and on the other hand they can allow them to practice lower prices on the market, thus unfair competition to companies in the formal sector of the economy.

The main economic disadvantages of the entrepreneurs, translated by risks and costs, are the following (Perry and Maloney, 2007): the risk that the evasionist entrepreneur will be caught by the state control bodies and, apart from penal liability, the evasionist may be charged with payment of the amounts due to the state, to which interest and penalties may be added; the impossibility to conclude legal contracts with other companies; do not have access to bank loans and other financing lines; they cannot benefit from the programs, incentives or grants offered by the government; they cannot expand their retail market or customer area.

Regarding informal work, the main benefit of informal workers is they do not pay taxes on wages and on social and health insurance, and in this way they have more money for their living needs. As a disadvantage, informal workers do not benefit from the social protection offered by the state to employees with legal forms, which means that informal workers will have to pay for their medical services alone, in case of sickness, services that can be extremely expensive, especially in developed economies. Another economic disadvantage of informal work is the lack access of informal workers to loans.

Not only entrepreneurs and workers benefit from the informal sector of economy, but even the state. The economic advantage that the state can have, by existence of the informal sector, of course, given that its size is within acceptable limits by the state, consisted in the fact that the poors, for which the state should provide social aid and unemployment benefits, could

benefit from (informal) income, thus relieving the state of the payment of those social benefits. However, as far as the state is concerned, the economic disadvantages of informality are far greater than the benefits of the informal sector, because the informal sector of the economy causes distortions of some economic indicators, such as unemployment rate, inflation rate, etc; causes financial losses to the state budget, generating budget deficits (tax evasion); results in a further increase in tax rates; makes unfair competition to companies from the formal sector; it is often characterized by low productivity and low incomes.

- *The social criterion*

Informality can be viewed as the result of voluntary "exclusion" or "exit" from the labor market, depending on the factors that cause workers to leave the formal sector of the labor market (Perry and Maloney, 2007).

Thus, informality appears as a result of "exclusion" from the market when the formal sector does not provide enough employment opportunities, bureaucracy is excessive and blocks access to formality or when the costs of becoming "formal" are high. Also, informality can also be interpreted as a result of the "exit" from the market when formal employment does not bring sufficient benefits to the workers or when they do not trust in public institutions. In this case, potential "formal" workers prefer to become entrepreneurs in the informal sector of the economy or informal workers.

When informality is the result of the "exit" from the formal labor market, there are a number of social advantages that, together with economic benefits, motivate individuals to opt for the informal sector.

The main social advantage for both entrepreneurs and informal workers is the flexibility of work in the informal sector.

As the formal labor market is known, although it has many advantages, it has the disadvantage of being extremely rigid, and this is due to the excessive regulations imposed by the state. Precisely this lack of flexibility was considered the main (but not the only) cause of the informal economy expansion. In most states, there are three categories of regulations that affect the level of flexibility of the labor market, namely: the law on labor contracts, the law on collective bargaining and the law on entrepreneurship, meaning the regulations that allow starting a business (Marinescu and Valimăreanu, 2018).

Work flexibility refers to: labor mobility (measured by the opportunity cost of urban incomes, urban unemployment and urban rents related to informal earnings), training and qualification of workers (most workers in the informal sector carry out unqualified activities and are willing to accept wages small) and to social exclusion on ethnic or other criteria (persons with disabilities, women) and it is specific to the informal sector and it is the opposite of job security, which characterizes the formal labor market (Marinescu and Valimăreanu, 2018).

In any job market, there is an increasingly fierce battle between employers, who want more flexibility and employees, who want more security. Thus, the concept of "*flexicurity*" is born (Crețu, 2010), which refers to that balance between labor market flexibility and job security, accepted by both parties, employers and workers, and which can be obtained when the contributions of work adapts relatively easily to the demand of the workforce, while ensuring a reasonable level of protection for workers (De Gobbi and Nesporova, 2005).

Therefore, the social benefits offered by the informality of the work refer mainly to the fact that the informal sector offers more flexibility to both employees and entrepreneurs, which allows individuals to have more time for household activities, entertainment, leisure or human capital development, and secondly that informal jobs are preferred by individuals rather than no income.

The social disadvantages of the informality of work refer to the fact that the informal sector implies worse working conditions than the formal sector, excludes workers from social security and offers both workers and entrepreneurs an unfair advantage, because they do not pay taxes or social contributions, compared to those in the formal sector.

- *The political criterion*

Political advantages of work informality refer to the fact that the informal system can be a "safety valve" for unhappy individuals and for social tensions in the economy, especially when social aid is small or even non-existent, and informal workplaces are often tolerated by governments or even encouraged, especially in developing countries, to obtain political capital.

The political disadvantages of the informality of the work are related mainly to the official statistics of the informal sector. Because informal activities, most of the time, are not included in the GDP measurement, statistics will give decision makers an unrealistic view of the economic reality.

Conclusion

Informality involves taking risks, whether we refer to "informal employment" or "employment in the informal sector" of the employees, or we are talking about tax evasion, in the case of the entrepreneurs. If in the case of employees, the main risk is the lack of job security and instability, in the case of entrepreneurs who carry out informal activities, which involve tax evasion, the main risk is to be caught by the state control bodies and therefore sanctioned contraventional or penal.

Speaking about taking risks, Taleb says he does not refuse idea of risk taking, but "criticizes encouraging uninformed risk taking." Taleb insists that if "we arrived here by accident, it does not mean that we should continue to take the same risks. We are a mature enough breed to realize this; we must enjoy the blessing and try to keep what we have acquired through luck, becoming more conservative. I played Russian roulette; now, however, it is time to stop and find a serious job to do" (Taleb, 2009). Thus, both workers and entrepreneurs who opt for informality should be well informed about the risks they are taking when choosing informal activities. Unlike workers who opt for informality because of the lack of an alternative, entrepreneurs choose informality, through a cost-benefit analysis, which is why they need to know very well the risks of informality and know when to abandon the "Russian roulette" that Taleb talks about it and they legalize their business become formal.

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CONNECTEDNESS OF STOCK MARKETS IN EASTERN AND CENTRAL EUROPE

Alexandru Vlădoi¹ and Alexandru Daia²

^{1) 2)} The Bucharest University of Economic Studies, Romania

E-mail: alexvladoi@gmail.com; E-mail: alexandru130586@yandex.com

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Abstract

This paper investigates the connectedness of volatility and market return inside the Central and Eastern European Market, particularly between the Central European cluster consisting of Poland, the Czech Republic, Slovakia, Austria and Hungary, and the East European Cluster consisting of Romania Bulgaria and Greece. We use the financial stock market as we consider the stock market to be an important source of financing for companies and that the stock market represents an important part in the economical environment of these countries. The paper analysis multiple methods of approaching connectedness problems, however will use the one based on dynamic connectedness analysis. We will analyze the data from a perspective before the financial crisis, during the financial crisis and after the financial crisis up to December 2019. We find a shift in geographical connectedness over the years, as well as a shift inside the peer group itself. It appears that larger more mature markets such as the Austrian have a clear dominant status in the region. We can also infer that the Romanian market showed signs of developing into a regional hub, compared to Bulgaria, which has very little significance in the region. In addition, the Greek market has lost significant influence in the region, driven by its economic and political turmoil over the last decade.

Keywords

Connectedness, stock market, volatility, return, Central Europe, Eastern European.

JEL Classification

F15, F36, G15.

Introduction

The theory of international diversification began in the 1970s with the work of Levy and Sarnat (1970) and Solnik (1974). The basic idea of international diversification is that market risk is specific to every country; therefore, diversifying across different country-risks lowers the portfolio risk. This argument is based on the fundamental idea that markets should act independent. In recent years, through the process of globalization, increasing international capital flow, and expansion of common markets such as the EU and its waves of extension,

we find reason to believe that some markets and some regions do share a common market risk, as we will conclude from the included literature. This paper will research the idea of connectedness through volatility and market return inside two distinct but geographically linked „EU Clusters”, Central European consisting of Poland, the Czech Republic, Slovakia, Austria and Hungary, and Eastern European consisting of Romania Bulgaria and Greece. Since the EU consists of independent countries that trade inside a common market, the question of market connectedness becomes very relevant. How connected are these markets and if they are connected, has this relationship changed in the last years?

The underlying assumption behind international diversification is that phenomena specific to individual countries affect returns in that country. If there is a relationship between individual markets, represented in the research to follow by the market index, this may lead to high cross-border interdependency between national indices. Potential gains from international diversification depend on the interdependence structure of the indices for various global markets in each period. At the same time, for example, industry correlation, if favourable, can lead to higher returns for a given sector cross-border, increasing the reputation of that industry. The underlying assumption is that if there is a return or volatility connectedness, there might also be a return spill-over effect from the interdependence of markets. More so, this relationship can change over time. As Diebold and Yilmaz (2015) show in their research, the reason why indices are a good indicator for connectedness is because they are built of stocks pertaining to large corporations that operate out of the individual country. “Stocks are priced based on expected future cash flow, which in turn is linked to economic activity. The resulting forward-looking perspective makes the stock market the most important barometer of current and expected future economic activity.”

One can argue that the analysis consists of primarily emerging financial markets. These markets might have lower capitalization than their peers, but as they are more or less similar in maturity, with some exceptions, the analysis should show if there is a capital markets interconnectedness driven by geographic proximity.

This paper will use econometric methods as presented by Diebold and Yilmaz (2015) to test three separate periods and analyse evidence of connectedness, by using the Variance Decomposition using Cholesky (d.f. adjusted) factors of vector auto-regressive (“VAR”) models by taking the 2nd degree lag and preparing a so called connectedness table. The methods will be better shown in the analysis chapter of this paper. The periods are not congruent, as we do not have daily high, low, opening and closing prices for all leading national indices prior to January 2007. The first period will be prior to 2008, consisting of the start of the financial crises. The second Period consists of 2008 until 2013, assuming that 2013 represented the end of the financial crisis and its repercussions, and a 3rd period consisting of 2014 until today (Dec’19), marking a period of stability and economic growth and therefore normal market conditions. Assuming connectedness exists, the effect can be explained by several economic reasons such as: volume of trade, flow of capital, or geographic proximity. If this is the case, the reasons for connectedness remain open to future research.

Recent research has focused on the relationship of international stock indices and the consequences of these changes on diversification and hedging. The results are controversial, and often yield contradictory results depending on the timeframe and restrictions imposed. New approaches are being developed to investigate the time-series movements of international stock markets. The aim of the literature review chapter is to present the most relevant findings in this field, as well as better explain the implications of international interdependence.

Review of the scientific literature

In the last years, significant research has been published focusing around connectedness, spill-over, contagion or other similar key words referring to a similar idea, a relationship that is not

fundamental in nature, that results in a irrational link between supposedly independent markets. Albulescu et al. (2015) evaluate the contagion from the perspective of futures contracts. The use of futures prices and not stock indices avoids the problem of market temporality. A study on the effect of the subprime crisis on the integration of stock market futures markets shows that the one in 2007 does not seem to affect the long-term movements between stock market futures markets. They use Wavelet Continuous Transformation (CWT). The analysis shows that futures markets grow in correlation during the crisis. They conclude that risk managers who want to benefit from portfolio diversification must have a long-term strategy to avoid contagion episode.

Asgharian and Nossman (2011) analyse how the capital markets of EU countries and the US capital market are affected. They simultaneously address all three aspects of market interactions, namely correlation, the effect of volatility and contagion. They look at the shocks that occur in every capital market in the EU, the United States and the idiosyncratic or local shocks, using a more general volatility model, such as the stochastic volatility model. More importantly, the model allows for the existence of leaps in profitability and volatility. Their method makes it possible to identify the contagion and directly model cross-border events. Their results show the contributions of the United States to the country variations that are generally below the contributions on the regional (European) market. The degree of integration in the EU, and automatically of European markets increases with the development of the European Union. They conclude that much of the volatility effect is due to regional markets but to a lesser extent to the US market.

Diebold and Yilmaz (2008), who are by now considered the norm in the field of connectedness, are interested not only in the volatility of financial markets and the contagion effect, but also in the link between macroeconomics, fundamental data and the volatility of asset profitability. They propose an international cross-sectional analysis between stock markets, GDP and the consumer index covering about forty countries. They show a clear link between macroeconomic factors and stock market volatility, so that volatility in macroeconomic factors leads to volatility in stock markets. This analysis was made for different periods from 1983 to 2002. Although the causal link is not permanent, and is specific to certain countries, it exists, and is reflected not so much in profitability as in the volatility of profitability. They show that the volatility of the stock market is robustly and positively related to the volatility of fundamental economic indicators. The positive relationship between the stock market and fundamental volatility is clear. They (Diebold and Yilmaz, 2011) continue to analyze the connectedness, based on the contagion index proposed by Diebold and Yilmaz (Diebold and Yilmaz, 2009) which they apply in terms of profitability and volatility in five countries in North and South America: Argentina, Brazil, Chile, Mexico and the USA. The results indicate that the contagion effect on both profitability and volatility differs greatly. However, the effects correspond closely to the economic events from January 1, 1992 to October 2008 at a weekly interval. The study of the periods without crisis, as well as those of crisis, 1992-2008, identifies that in both periods there is evidence of divergent behavior both in the contagion of profitability and in that of profitability. As their analysis is the most complex and in-depth from the proposed methods, we will base the analysis on a slightly altered variation of their analysis.

Methods and analysis

We have collected daily national indices prices from Bloomberg for the period 01 January 2007 until 31 December 2019, for the WIG in Poland, PX in the Czech Republic, SAX in Slovakia, ATX in Austria BUX in Hungary, BET in Romania, SOFIX in Bulgaria and the ASE in Greece. The sample includes daily high, low, opening and closing prices, resulting in 6.300 data points. The data was normalized by using the average between two points for the missing data, resulting from bank holidays in different markets/countries.

We divided data into three periods:

- January 2007 to December 2007 (Period 1), particularly the first year that Romania and Bulgaria became EU members. Note prior to this period we did not have consistent data points for all indices, particularly Bulgaria's SOFIX.
- January 2008 to December 2012 (Period 2), as a period representing the financial crisis and sovereign debt crisis in the EU.
- January 2013 to December 2019 (Period 3) to reflect the post financial crisis period.

We did not complete the dataset up to April 2020, do avoid the impact of the corona virus on the sample.

We used in our experiments daily returns computed as the natural logarithm of the daily closing price over the opening price, and daily annualized volatility using two approaches. The Parkinson volatility estimator as presented by Shu (2006) and the Garman and Klass (1980) volatility estimator, as adjusted by Alizadeh et al. (2002). We then proceed to build the connectedness table as defined by Diebold and Yilmaz (2015). We reject the null hypothesis, the data does not have a unit root at 5% significant level, the , hence both returns and volatility are stationary, Jarque–Bera test indicates rejection of the normality hypothesis, there are 8 cointegration equations at the .95 level of confidence, hence we will use max 8 lag. We move on to build the connectedness tables on hand of the variance decomposition of the VAR model. For the sake of space and time, we will not provide the full formulas and derivation of the methodology in this paper. We will also not show the Parkinson volatility in this paper, as the general relationship is one to one the same as the Garman and Klass volatility approach. We argue that from the two estimates, the Garman Klass incorporates more information on daily events, and hence provides is a better variance decomposition for volatility.

Findings

After running the experiment, we identified that both return and volatility show a clear picture of the direction of return shocks and volatility shocks in the Central and Eastern European region. The results (table no. 1 and table no. 2) contain valuable information on several layers of return and volatility connectedness in the region. The experiment shows that from all possible forms of geographic and economic connectedness over the period close to a third of the forecast error variance comes from connectedness, both for volatility (28,7%) and returns (29,5%). Though not significant capital flows between these countries, as most of them are driven by more developed economies such as Germany, there is still a certain geographical component to connectedness.

Table no. 1 Return connectedness table - period 2007-2020

2007 - 2020	ATX	WIG	PX	SAX	BUX	BET	SOFIX	ASE	From
ATX	94,3	1,2	0,6	0,9	0,5	1,1	0,9	0,5	5,7
WIG	21,2	76,2	0,5	0,7	0,6	0,4	0,1	0,3	23,8
PX	39,1	7,6	50,4	0,9	0,3	0,8	0,7	0,1	49,6
SAX	39,5	7,8	0,8	49,3	0,7	0,6	0,9	0,3	50,7
BUX	17,9	11,7	3,2	2,0	63,8	0,5	0,7	0,2	36,2
BET	23,6	1,4	2,4	1,3	0,2	69,8	0,9	0,2	30,2
SOFIX	7,8	1,7	2,1	1,6	0,6	2,7	83,1	0,5	16,9
ASE	16,0	2,5	1,6	1,0	0,5	1,4	0,4	76,7	23,3
To	165,1	34,0	11,2	8,3	3,3	7,5	4,8	2,2	
Net	159,4	10,2	-38,4	-42,4	-32,9	-22,7	-12,1	-21,2	29,5

Source: Own research

As expected, the ATX is the leading index in the region, as it has significant business exposure to other less capitalized markets. We note that the second largest effect to other markets is represented by the Polish market, which also has increased in importance over the last years, as the Polish economy has grown significantly over the last years. We note that the Czech Republic and Slovakia are highly connected to the Austrian market, given their geographic proximity and historical connections. The same applies to the Romania and Hungarian Market, which show the same connection, to a lesser extent to the Austrian market but not to each other.

Table no. 2 Garman and Klass volatility connectedness table - period 2007-2020

2007 - 2020	ATX	WIG	PX	SAX	BUX	BET	SOFIX	ASE	From
ATX	92,4	3,0	0,6	0,8	0,3	0,7	2,3	0,1	7,6
WIG	23,3	73,1	0,8	0,5	0,7	1,1	0,5	0,1	26,9
PX	38,6	8,0	48,3	0,3	0,1	1,6	2,9	0,1	51,7
SAX	39,5	8,9	0,9	49,2	0,4	0,3	0,7	0,2	50,8
BUX	21,5	9,8	2,8	1,3	60,4	2,0	1,8	0,5	39,6
BET	19,3	3,5	2,2	0,3	0,3	72,9	1,4	0,1	27,1
SOFIX	11,4	0,4	0,7	0,3	0,3	1,5	85,2	0,2	14,8
ASE	6,4	1,5	1,1	0,3	0,7	0,4	0,3	89,3	10,7
To	159,9	35,0	9,1	3,8	2,9	7,6	9,8	1,2	
Net	152,2	8,1	-42,6	-47,0	-36,7	-19,5	-5,0	-9,4	28,7

Source: Own research

Finally, we notice that the Bulgarian index does not follow the normal trends in the region, given probably by its limited capitalization and exposure to the region. While the Greek market responds to shocks from the region, it does not influence the other markets, as they do not have close industrial ties with the region. Interesting to note that the Polish market has both a leading tendency as well as a lagging tendency, in the sense that it encompasses the geographic exposure. However, the full-sample analysis overlooks many details that are crucial to understanding connectedness over time; hence, we resume the same analysis over the 3 periods, as defined above.

When looking at the periods independently as seen below (table no.3), we notice that volatility connectedness appears to be decreasing. While in 2007 the forecast error variance from connectedness for volatility is 43,2% and returns 44,2%, it drops in the financial crisis period to 36,4% for volatility and 28,1% for return, only to drop again after the financial crisis to 18,7% for volatility and 20,8% for return. There appears to be a trend in de-connection in the geographic area. Interesting to note that while the Austrian market remains the dominant market in the region, the influence of other markets on the Austrian market becomes minimal. Consistent with the growth of the Polish economy and its role as an important capital market in Eastern and Central Europe, the WIG has surpassed geographic influence, resulting in a market that is not influenced by neighboring markets. We note that the Czech, Slovakian and Hungarian Market have registered an increasing connectedness from their peers during the financial crisis, consistent with markets moving together during financial downturns. The same applies to the Bulgarian market. We note that the BET has continued to gain independence from other neighboring markets, despite the financial crisis. This is consistent with the facts that the BVB ("Bursa de Valori Bucuresti") has increased in importance in the region, developing to a regional hub. The Romanian market continues to be strongly influenced by the Austrian market, consistent with the high volume of capital with this country, through its financial institutions. The Bulgarian market on the other hand appears to

have a minimal connectedness to its EU neighbors. This is also consistent with the national/local capital market in Bulgaria. To note is finally also the declining importance in the region of the Greek market, also consistent with the political and economic events that have deteriorated the financial system in Greece over the last decade. We note that we have only added the Net return summary for the connectedness table, as the trends in development are identical. Of course, the impact the forecast error variance for return differs, however this paper investigates trends and not the forecasting possibility.

Table no. 3 Garman and Klass volatility and net return connectedness

	Period	ATX	WIG	PX	SAX	BUX	BET	SOFIX	ASE	From
ATX	1	78,3	3,7	4,3	3,4	1,7	1,0	2,2	5,6	21,7
	2	89,5	4,5	0,8	0,9	0,6	1,0	2,7	0,0	10,5
	3	95,6	0,8	0,5	1,9	0,6	0,2	0,2	0,2	4,4
WIG	1	28,6	53,7	3,7	2,6	1,4	1,7	4,5	3,8	71,4
	2	27,1	65,4	1,8	1,0	1,7	1,7	1,0	0,3	72,9
	3	11,6	86,4	0,2	0,5	0,6	0,1	0,4	0,2	88,4
PX	1	33,8	6,5	40,0	2,9	3,7	1,2	2,5	9,2	66,2
	2	39,3	11,1	41,3	1,0	0,7	2,9	3,2	0,4	60,7
	3	32,0	2,3	61,7	1,9	0,9	0,1	1,0	0,1	68,0
SAX	1	37,4	10,9	4,2	38,1	2,2	3,1	2,1	1,9	62,6
	2	42,0	14,0	1,4	40,3	0,8	0,5	0,6	0,4	58,0
	3	30,2	4,8	0,8	62,7	0,8	0,4	0,2	0,2	69,8
BUX	1	16,3	10,0	4,5	4,2	55,8	2,7	3,8	2,7	83,7
	2	23,9	14,2	3,2	2,0	51,3	3,2	1,6	0,6	76,1
	3	13,1	2,4	2,2	1,1	80,3	0,1	0,4	0,4	86,9
BET	1	7,7	6,1	2,3	3,4	3,9	65,7	6,6	4,3	92,3
	2	20,7	3,9	2,1	0,6	0,3	70,5	1,7	0,3	79,3
	3	17,9	1,8	4,4	0,7	1,2	73,7	0,1	0,2	82,1
SOFIX	1	2,8	3,4	1,6	1,5	1,4	1,3	85,1	2,8	97,2
	2	18,4	1,1	1,0	1,1	1,1	2,0	75,0	0,3	81,6
	3	0,7	0,6	0,4	0,2	1,0	0,4	96,3	0,3	99,3
ASE	1	39,6	7,3	5,8	3,9	1,3	1,0	3,3	37,9	60,4
	2	13,3	3,2	2,0	1,2	2,5	1,8	0,7	75,3	86,7
	3	2,5	1,0	1,5	0,2	0,3	0,3	0,2	94,0	97,5
To	1	166,3	47,9	26,3	22,0	15,5	12,0	25,0	30,4	
	2	184,7	52,1	12,3	7,6	7,7	13,1	11,6	2,3	
	3	107,8	13,6	10,1	6,5	5,5	1,5	2,7	1,6	
Net Volatility	1	144,5	1,6	-33,6	-39,9	-28,7	-22,4	10,1	-31,7	43,2
	2	174,2	17,5	-46,4	-52,1	-41,0	-16,4	-13,4	-22,4	36,4
	3	103,4	0,0	-28,2	-30,8	-14,2	-24,7	-1,0	-4,4	18,7
Net Return	1	119,7	8,3	-10,4	-35,9	-21,4	-20,6	-15,6	-24,0	44,2
	2	178,1	18,6	-38,8	-45,0	-37,8	-25,9	-16,0	-33,3	38,1
	3	120,5	1,0	-37,9	-34,1	-22,2	-15,4	-2,3	-9,7	20,8

Source: own research

Conclusions

We have analyzed the connectedness of EU member states in Central and Eastern Europe, and have concluded that there was a shift in both geographical connectedness over the years, as well as between the peers itself. It appears that larger more mature markets such as the Austrian and newly the Polish market have a dominant status in the region, while smaller markets connect to regional hubs. We can also infer that the Romanian market has shown signs of development towards a regional hub, compared to Bulgaria, which has very little significance in the region. Thirdly, we can conclude that the Greek market has lost significant influence in the region, driven by its economic and political turmoil over the last decade.

While the decomposition of a VAR using Cholesky (d.f. adjusted) may be influenced by the ordering structure and definition of volatility and return, we clearly observe that the trends shown are consistent with the economic reality in the region, delivering a numeric true big picture of how connectedness works in these regional markets.

It is important to note that the connectedness method (Diebold and Yilmaz, 2015) method of analysing connectedness and their proposed connectedness table accurately reflected the situations of the periods.

The question that comes out of this research is, has there been a shift in connectedness from these countries towards more mature markets, making the linkage in connectedness more global?

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INCREASING THE COMPETITIVENESS OF THE FISHING SECTOR IN MOLDOVA. RESEARCH ON NEW FISH FEEDING SCHEMES

Mihaela Munteanu Pila¹

¹⁾ „Dunărea de Jos” University of Galați, Romania,

E-mail: mihaela_pila@yahoo.com

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Abstract

This paper proposes an evaluation of the economic efficiency of fishing activities in aquaculture growth carp (*Cyprinus carpio*) by feeding it with non-cereal-based feed. This type of feed is profitable, allowing to obtain a high fish production, with a high quality, and a solution to increase the profitability of fish farming in the area. The aim of the study is to evaluate the effects of non-specialized feed for fish (grain-based) on the economic efficiency of fish farm production, and the development of methods for modelling the optimal food ration structure on carp farms. Research has shown that changing the composition of feed can significantly increase farm productivity. An increase in the proportion of barley in the diet, with the addition of vitamins, has the best effects on the quantity and quality of fish production. The results of the research are of practical importance for fish farms specializing in carp farming and for other species of Ciprinidae.

Keywords

Carp, production, feed, Republic of Moldova.

JEL Classification

Q25, O33

Introduction

Economic activity "fishing and fish farming" is important to ensure food security in the country and can be based on qualitative and quantitative production. Aquatic living creatures, and fish in particular, have the highest rate of growth and recovery of feed compared to terrestrial species. The development of significant aquaculture production involves respecting conditions linked to the fish farming season, feeding conditions, water temperature, mobility of aquatic biological resources, difficulty in predicting stocks of aquatic biological resources and determining the rational weight of their withdrawal without compromising the final outcome. The Republic of Moldova still has great potential for the development of fish

farming, although in the second half of the 20th century most of the ponds and swamps were drained and used as agricultural land. Due to the division of many ponds, the degradation of the remaining ponds and the reduction in productivity in aquaculture, the country currently imports more than 50% of the fisheries products distributed on the market. Excessive fishing, through illegal methods or in protected areas, the lack or insufficiency of systematic controls by the competent institutions have seriously affected the country's fish fauna (Munteanu Pila and Stanciu, 2017). The fisheries sector has fallen in all respects, including fish growth in pond. For example, at the end of 1980, annual fish production was over 6,500 tons and has now fallen to 1,042 tons. In the period 1970-1990, the National Fishery Directorate was concerned about improving national fisheries production by proposing a program for the development of the sector, i.e. to increase fish production by at least 30%. After 1990, state subsidies no longer covered the costs of fish farms with expensive feed, which is why the national fisheries sector experienced a sharp drop in fish production in the period 1994-2006. The most affected activity was the increase of carp, so in 2006 the sector produced only 32.2% common carp (*Cyprinus carpio*).

Common carp (*Cyprinus carpio*) and other carp fish from the Ciprinidae Family (grass carp, silver carp, bighead) represent some of the most popular fish species on the internal market of the Republic of Moldova. The correct choice of feed is of crucial importance as it has the highest production cost and has the greatest influence on profit.

Short literature review

The natural advantages, including the aquatic resources, can be successful factors for the food production of the Republic of Moldova (Munteanu Pila and Stanciu, 2018). As regards its total national area, the Republic of Moldova has a significant natural fishy potential. Rivers, lakes and other wetlands cover 95,000 ha, or 2.8% of the country. 7.5% of the natural aquaculture potential is used in the fishy area, and only 5 major fish farms operating on the national territory. Local fisheries operate extensively, based on polyculture system. Although the national territory has significant natural resources, their exploitation is ineffective, the national food market depending on the imports of fishery products. A number of fish species from the natural environment are endangered, measures to protect them being necessary.

The Government support that encourage private initiative for fishing sector, mainly in the direction of an intensive exploitation by means of aquaculture is needed. European funds may represent a solution to revive the Moldovan fishy sector.

Privezentlev, Anisimova and Taraev (1980) considers that although *Cyprinus carpio* is not a fussy fish species, an over feeding of specimens in aquaculture will lead to a rapid increase in weight, but also to a significant decrease in the organoleptic quality of the meat. Krylov, (2004) notes that the omnivorous nature of the carp allows the use of non-specialized feed such as mixes of feed, cereal feed and wheat bran, which does not reduce the organoleptic quality of fish meat. High nutritional value of feed can lead to massive agglomerations in intensive growth areas and additional aeration is required. If the rules of growth are not respected, there is a high risk of death and serious losses for farmers (Novitki, 2016). Improving methods to increase the natural productivity of aquatic ecosystems is one of the main tasks in aquaculture, as the quantitative characteristics of an established feed for carp growth can be used in the modeling of the growth process and other species of cyprinid (Tiuclenova and Klusina, 2015). Kestemont and Stalman (1992) have demonstrated that in European countries for culling non-specialized feed is used only as supplements to natural feed from pond, due to the fact that only 5 % of the feed is digested, the remaining 95 % is eliminated by feces into water, and is used only as a fertilizer for plancton development (Kestemont and Stalman, 1992).

Material and method

Information about economic efficiency, growth of commercial carp, as a species of fish of value, was obtained from specialist works, taken from official sources: Google Academic and ResearchGate. Data on the generation of major production by the introduction of two types of feed into the feed ration were obtained from their own research. Data collected has been processed statistically and interpreted. The results obtained were compared with other literature data for appropriate interpretation.

Results and discussions

The natural advantages, including the aquatic resources, can be successful factors for the food production of the Republic of Moldova (Munteanu Pila and Stanciu, 2018a).

In natural aquatic ecosystems in the Republic of Moldova, the species with vital cycle are dominant, along with a massive degradation of the population with a longlife cycle. According to study made by Munteanu Pila and Stanciu (2018b), the richest diversity of ichthyofaunistic and fishery production is found in the lower courses of the Dniester River and the Prut River due to the ecotone zone. As for the diversity of the fish population (sabre carp, ide, streber, common nase, Romanian barbel, burbot), the Prut river significantly exceeds the Dniester river, which denotes a less pronounced anthropogenic phenomenon of the Prut river compared the Dniester River. An essential factor in maintaining a multidisciplinary fishery production is the systematic water quality monitoring meant to exclude excessive mineralization or pollution, a biological improvement, and a populating with spawns that would change today's unfavourable situation.

One of the most important tasks facing the fish farms in the Republic of Moldova is the ability to grow saleable fish of the carp species (*Cyprinus carpio*) with an average weight of 2,500-3,200 g. To this end, traditional Moldovan technology recommends the use of specialized feed for the rapid weight growth of marketable fish. The largest fish farm, "Post Brat", with an area of 50 ha, in the South area of the Republic of Moldova, is engaged in the breeding of indigenous fish, especially of carp (*Cyprinus carpio*). The fish farm has been active for 8 years and uses non-specialized feed (a mixture of cereals with added vitamins) on its territory. During the years 2012-2014, the "Post Brat" fish farm used a mixture of feed (barley, wheat, sunflower sprats and other mixtures), with no addition of vitamins. This has led to a more difficult increase in carp (*Cyprinus carpio*) and low resistance to diseases, especially during the spring period.

According to figure no. 1, the private farm 'Post Brat' used a mixture of non-specialized grain feed for commercial growth of the species *Cyprinus carpio* in 2012-2014. Of which compound feed (61%), which accounts for the highest share in feed structure, barley (28%), wheat (7 %), sunflower meal (2 %) and others (2 % oil). Since 2015, the private farm-owned fish breeding company 'Post Brat' began to gradually increase the share of feed produced independently by the farm and reduce the share of compound feed in the diet of carp, thus the farm has completely switched to the non-specialized feedstuffs of its production (figure no. 1).

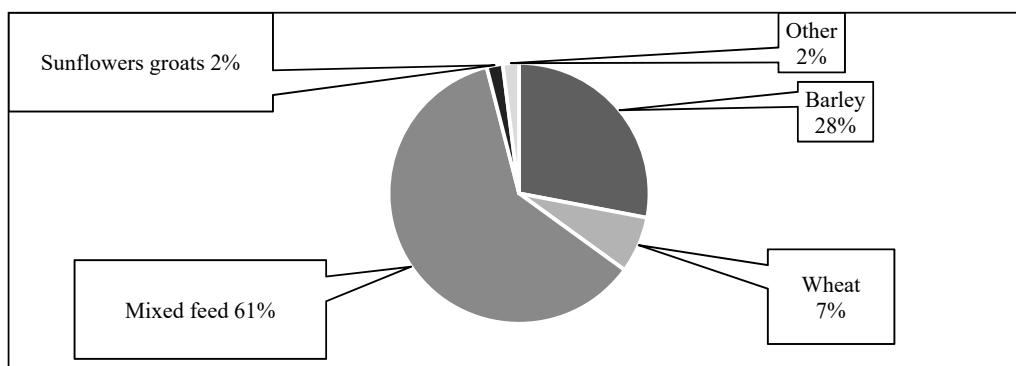


Fig. no. 1 Composition of feed for fish for 2012-2014

Source: Own research

The structure of nourishment for *Cyprinus carpio* in 'Post Brat' for the period 2015 is shown in figure no. 2.

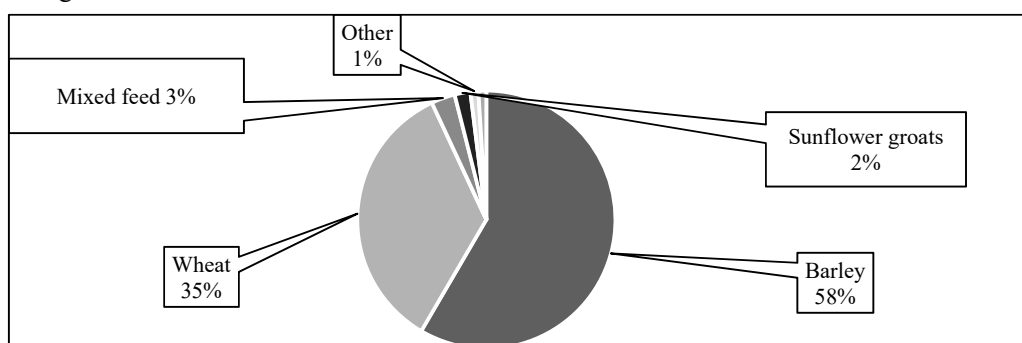


Fig. no. 2 Composition of feed for fish for 2015-2019

Source: Own research

Ingredients: Barley 58 %; wheat 35%; 2% sunflower seed; compound feed 3 %; fish oil of more than 1%;

Vitamins: Vitamin A 25000 I.U Vitamin D3 2000 I.U Vitamin E 25 mg Vitamin C 750 mg.

Composition is presented in figure no. 3



Composition:

- Extruded feed for fish on farm with high cereal quality content: barley, wheat and fish oil.
- Contains an addition of vitamins for high survival rate and for the rapid development of a healthy baby.

Fig. no. 3 Extruded feed, on farm premises

Source: Own research

The widespread use of farm-based feed will allow the economic and technical balance of the commercially available fish production to be maintained, thanks to the choice of the optimal feed ratio, in relation to resource constraints and market requirements, in order to maximize financial results. In figure no. 4a an increase in fish productivity can be increased (indigenous

fish) from 25 tons/ha of fish (2012) to 52 tons/ha of fish for 2019 can be observed, which shows a significant growth dynamic. The evolution of experimental lots of carp is represented in (figure no. 4b), as the main objective of the farm is to increase the production of this fish species.

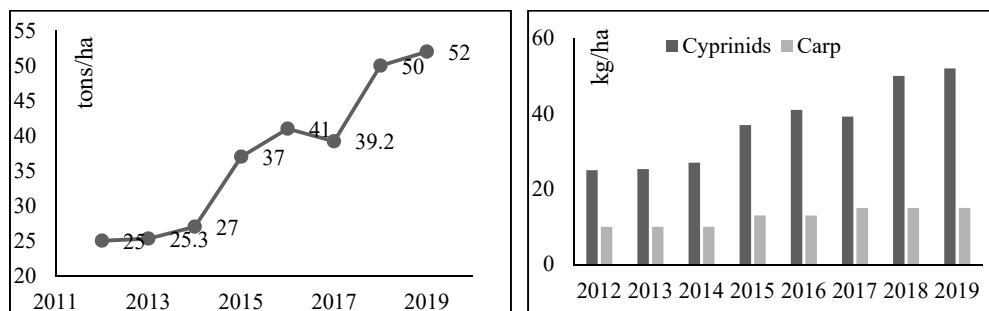


Fig. no. 4. Fish farming productivity: (a) total cyprinid, (b) carp, (2012-2019)

Source: Own research

Feeding fish to aquaculture farms appears to be one of the most difficult and important aspects of the organization of fish farming, as achieving a proper diet and rapid weight growth depends on food ration, quality and volume in terms of productivity and area. For the determination of the productivity-economic output of the "Post Brat" farm, the following indicators were analysed, such as: average weight of a carp (on sale), average weight increase of a carp after the feed administered, productivity of the cyprinids in tons per ha and carp in kg/ha, annual profit. Due to the administration of vitamins in feed, the farm had a higher yield during the years 2015-2019 by 4.61 %. The effect of the quantity of feed on the average weight of a fish and its productivity is shown in (table no. 1)

Table no. 1 Comparison of productivity over the period (2012-2014) and (2015-2019)

Feature	2012-2014	2015-2019
Commercial fish, total (tons)	28.57	45.55
Carp (kg/ha)	10.00	15.00
Profitability (%)	2.84	4.61
Average feed administered, May-November period (kg/)	585.71	585.71
Average weight of carp, sold in fisheries (g)	1.800-2.400	2.200-5.000
Cost of carp (Euro/kg)	1.75	2.00
Annual profit (euro)	12,000	20,000

Source: Own research

According to the recommended standards, the production of carp is 8 kg/ha (minimum). By 2017, the "Post Brat" Fish Farm had achieved an average of 10 kg carp/ha. After the introduction of the two-year adaptive growth technology, with vitamin feed fortification in the period 2017-2019, the productivity of carp in pond increased up to 15 kg/ha. Improving technical and economic parameters will gradually lead to positive results in higher carp productivity of up to 25kg/ha due to the nutritional efficiency of the feed. The analysis, carried out over an eight-year period, has enabled the influence of the composition of the feed on the yield of the carp growth to be determined. This established recipe for 2 types of feed for carp growth and high economic results. The results obtained showed a high degree of reliability (more than 75 %), a major criterion for increasing the productivity of carp (more than 15 kg/ha). After comparative analysis of the administration of the two feed types, a stronger

effect of the compositional recipe 2 consisting of 59% barley, 35% wheat and vitamin addition was observed. In this case, the influence of barley and the addition of vitamins for the living weight increase of commercial carp was significant (fig.no. 2).

Conclusions

The use of non-specialized feed at the fish farm "Post Brat" offers the possibility of producing large quantities of high-quality fish at low costs, which will increase the competitiveness of the unit on the Moldovan food market.

An increase in the proportion of barley in the diet, with the addition of vitamins (feed 2), has increased the fish productivity by 1.77%. The production of non-specialized farm feed has reduced production costs, i.e. increased farm income by 8 % and increased the mass of profit (in the first feed recipe by 1,3 times, in the second to 1,5 times), what was represented in (table no. 1). This led to an increased profitability in the first case by 2.84 % and in the second case by 4.61 %. Therefore, the productivity of fish in the following years will increase to 60 tons/ha for cyprinid and 25 kg/ha for carp *Cyprinus carpio*, respectively.

The most efficient feed for fish is based on cereals: barley, wheat, maize, low-cost feed, which can lower the cost of domestic fishery products and increase the production profitability.

Acknowledgements

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INDUSTRIAL HERITAGE TOURISTIC CAPITALIZATION IN A HISTORICAL TOWN

Mădălina Nicoleta Frînculeasa¹ and Răzvan Ion Chițescu²

¹⁾ Valahia University of Târgoviște, Romania

²⁾ National University of Political Studies and Public Administration, Romania

E-mail: madalina_chitescu@yahoo.com; E-mail: razvanric@yahoo.com

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Abstract

The industrial heritage, especially the architectural one, represents an important cultural resource nowadays. Generally, it is in a precarious state of preservation and a predominantly private property. Its conservation and revitalization involve the conversion of the primary function, and this involves many factors - political, social and economic. The paper presents the possibility of capitalizing on this type of heritage in a historical city, from the perspective of the local community. The results of the research show that its inclusion in the urban structure has multiple advantages - improving the quality of life, social and environmental benefits. Local communities and other stakeholders can influence the decisions regarding the future conservation and capitalization of these elements of post-industrial heritage as potential tourist locations, thus developing new alternatives to traditional tourism.

Keywords

Industrial heritage, local communities, Târgoviște, tourism, capitalization

JEL Classification

Z320, Z390

Introduction

Tourism is, in recent years, the main functional unit of the economy and it is considered the third largest "exporter" in the world after the oil and auto industry (Borges Scalabrini and Remoaldo, 2020, p.235). The adaptation of the tourism phenomenon to the current socio-economic dynamics has determined transformations in the level of its types of manifestation which have led to the rethinking of traditional forms. A viable alternative was the integration of the industrial heritage in the tourist offer by rethinking thematic tourist circuits or defining new attraction poles that have as a basis the valorisation of the architecture of old industrial sites and its "immersed" elements-the workers' houses or the urban workshops (Bocquet, 2008), of technology, but also of the social history of work. Thus, the re-imagining of

industrial areas partially or totally abandoned, allowed both the restoration and preservation of heritage, as well as the development of industrial tourism by speculating the urban preferences of the modern tourist.

In Romania, the diversity of the categories of industrial architectural heritage is the expression of the industry's evolution at the national and local level. The preservation of the elements of industrial heritage results, on the one hand, from the need to preserve the identity of the places and the memory of the buildings of the work (Ronchetta and Trisciuglio, 2008), and on the other hand from the theistic use. Many cities were created and developed having as their epicentre the industry based either on local resources of the basement or on the development of branches whose products were intensely used by society. Overcoming the industrial period, through the development of modern technologies and the depletion of basement resources, has led to abandonment, thus degradation and, sometimes, destruction.

Case Study Element Profile (UPET Hall)

Târgoviște is no exception, its economy, based on the industrial activity is being replaced, gradually, with tourism and the economy based on consumption. The former capital of the Țara Românească (1396-1714) represents today a city that lives from exploiting the history transmitted through its numerous historical monuments. Thus, tourism constitutes a defining component of its social and economic life, being a phenomenon that coagulates around it important human and material elements, local and regional. The city has a cultural-historical heritage that allows it to offer quality, competitive tourism products, being able to satisfy the demands of all categories of Romanian and foreign visitors. Even though the central tourist point of the town is represented by the Curtea Domnească, an ensemble comprising numerous historical monuments that evokes the main transformations of over six centuries of socio-political and administrative evolution. Thus, the mix between old and new, elegant and cumbersome, functional and aesthetic, defines a city with multiple socio-cultural, economic and political implications and connections, which argue the current concerns for knowing the content of tourism and for deciphering its efficient operating mechanisms. The capitalization of the industrial heritage represents an opportunity that, used intelligently, can be an important asset for local tourism.

The main element of our study was one of the emblematic buildings of the industry in Dâmbovița (code DB-II-m-B-17182.01), but currently in an advanced stage of degradation. This is the only one of the industrial architectural ensemble of the *Uzinei de Utilaj Petrolier Târgoviște* that survived the two fires-from 2nd of November 1918 caused by the German army and 14th of May 2008 and demolition. The history of the edifice of which the analysed object is part (Toma and 2012. p.66-67, p. 487-488) begins in 1864 when the ruler Al. I. Cuza sows the act which establishes the creation of the first industrial unit of the city. For financial and political reasons, its construction begins in 1865 on the extended site, through the expropriation of 24 private lands, the garden and the cemetery of the *Mitropolie* and lasts until 1872. It represented the *Fonderia de tunuri* with all the necessary units (workshops, administrative buildings, warehouses) and the facilities required by the assigned function. From 1876-1935 it is transformed into the *Arsenal de Depozit al Arsenalului Central București*. After a period of development as a workshop and armoury depot, between 1935 and 1943, it becomes successively the *Arsenal de Front* (until 1939), and then, by diversifying the activity and technical-administrative reorganization, the *Administrația Publică a Arsenalului Armatei*. Under the name of the RRW *Gheorghe-Gheorghiu Dej*, between 1945 and 1949, it started to produce machinery and machines, spare parts for wagons and maintenance of the railways. After 1950 it is taken over by the Ministerul Industriei Grele and it is transformed into a modern factory, the *Uzina de Utilaj Petrolier Târgoviște* (UPET) established both nationally and internationally. Its activity is constantly running until 1990 when it has more owners, and its production is reduced, as is the area it occupies (land sales).

**Fig. no.1 UPET evolution moments**

Source: <https://lobbyandadvocacy.weebly.com/halele-upet.htm>

The Role of the Local Communities in Tourism Development

The development of cities is closely related to the possibility of socio-political and economic factors to value the cultural heritage that they administer tourist worth. The role of local authorities and communities is becoming more and more important in the tourism planning process due to their direct or indirect interests. The integration of the industrial heritage, present in all Romanian cities, in tourist circuits presents a challenge for all the actors involved, especially for those from the cities that are identified and lives through its history. The issue raised by this article brings in discussion the local community as a basic element of the development of modern tourism. It is a topic present in the scientific literature that concerns the impact of the tourism phenomenon in the multiple hypostases of its interpretation, starting from general theoretical approaches and covering the wide range of local or specific particularities of the types/forms under which it can manifest.

Table no. 1 Participation motivation and opportunities of the main actors in the tourism process in promoting the industrial heritage

Interested parties	Motives of interest	Activities/Initiatives	Effects/Impact
Local Community	Landscape's aesthetics Jobs Local cultural identity Social connections Education	Cultural projects Social attitude Training programs	Medium and long term
Local Administration	Landscape's aesthetics Sustainable development Incomes Local cultural identity	Public initiative National and European funds access Promotion	Medium and long term
Buildings' owners	Rehabilitation Conservation Incomes	Public-private partnership	Medium and long term
Tourists	Touristic attractions Forms/Touristic offers diversification Social experiences	Interest Circuits payment	Permanent

Source: authors

Methodology

Our research focused on the way of reporting the community of Târgoviște to the possibility of tourist valorisation of an element of industrial heritage that is in a state of degradation, but which is not part of the momentum category (predominantly medieval) by which the city is distinguished.

The purpose of the study was the validation of three hypotheses on which the authors support the idea of tourist valorisation of industrial architectural heritage in a historical city:

H1. The integration of industrial heritage in tourist circuits guarantees the restoration and preservation of buildings left to deteriorate;

H2. The tourism valorisation of the industrial architectural heritage of Târgoviște creates the premises for the resizing of the tourist concentration poles;

H3. Economic and social stimulation may be the consequence of finding alternatives to traditional forms of tourism.

Table no. 2 Hypothesis validation indicators

Hypothesis	H1	H2	H3
Indicators	Knowing the local industrial heritage	New town perimeters capitalization	It offers new jobs for residents
	Revitalization of degradation buildings	Friendly relationship between tourists and locals due to its location in an intensely frequented perimeter	Opportunities for local companies
	Area aesthetics change	Development of some creative tourism points/areas	Tourism offers a higher visibility of the destination, attracting more tourists
	Life quality rises	Decreased pressure on intensely visited historical monuments	Infrastructure development
	Improvement of the urban image and experience	Decreased pressure on the residential area in the vicinity of the main tourist hub	Important spending

Source: authors

The research had as an instrument the questionnaire (15 opinion questions, 5 for establishing the profile of the respondents) and was carried out during the period September-December 2019. 436 questionnaires were distributed, of which 409 were valid.

Results and discussions

Demographic profile of respondents: *Gender* 41,45% male, 57% female; *Age*: 20 7,09%, 20-40-43,52%, 40-60-34,96%, 60+-14,42%; *Employment status*: Employed-28,85%; Unemployed 16,62%; Self-employed -16,38%; Student-25,42%; Pensioner-12,71%; *Work in tourism*: Yes-30,56%; No-64,54%; Family members working in tourism industry- 9,29%; *Resident*: Yes- 85,81%; No -14,18%.

The interpretation of the provided data by valid questionnaires led to the establishment of indicators that would allow validation of working hypotheses. They represent the starting point of the analysis of the results and represent the key value of each question.

H1. *The integration of industrial heritage in tourist circuits guarantees the restoration and conservation of buildings left to degrade.*

Each element included in the cultural heritage has a story, and its defining coordinates are established according to its interaction with the society in different historical contexts. Thus, it is not just his story, but of a whole space and the people living there. The value of an element is given by the symbol it represents and its power to be transmitted over time. The UPET hall represents a cultural-historical value relevant to the group identity of a community (which in its period of maximum development meant 14000 workers, to which their families were added) and an aesthetic value reminiscent of the industrial architecture specific to the end of the 19th century. Some political-economic conditions the whole of the industrial buildings of the old Arsenal al Armatei were destroyed in turn either by the passing of time or by the negligence of the people. One of them, the Arsenal Building, has been restored and used both its architecturally and functionally (restaurant, headquarters of a bank). At several tens of meters, it is in a strong state of degradation, the last hall of the initial establishment of the *Fonderia de tunuri*. Located in private property, this monument disappears little by little. The respondents do not consider that its restoration and conservation is related to its classification in a tourist circuit (36%), leaving this to the owner, as well as the use. Moreover, they do not believe in changing the aesthetics of the area (13%) because the building is in the vicinity and in the shadow, of commercial spaces whose architecture is, in general, specific to the peripheral commercial areas of the cities, not the civic centres. However, they admit that its restoration and transformation into a tourist point could improve the urban image and experience (54%), but provided that it is a multivalent space that offers the same facilities to the resident and tourist (for example, the transformation into a restaurant or commercial space). Greffe points out that investments in cultural heritage are more sustainable if they are made in areas where it does not play a dominant role and where there is a high level of economic integration (Greffe, 2004).

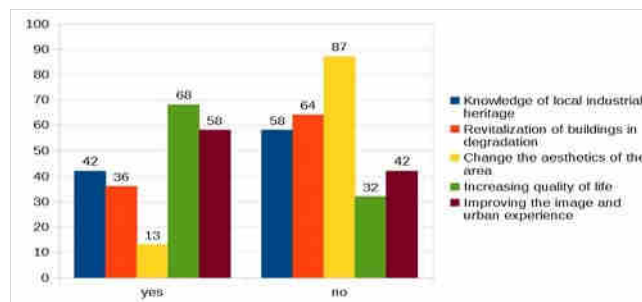


Fig. no. 2 Percentage interpretation of first hypothesis' indicators

Source: authors' data processing study

Analysing the answers of the interviewees, I found that many of them (58%) did not give them historical or aesthetic value, so for them, there were no conditions to be restored and preserved. Although in the public space there were numerous initiatives that supported the conservation of this heritage (for example, news articles, cultural projects, cultural events) whose historical and aesthetic value were still remembered, I considered that the lack of information is the main reason for this result. The solution would be to develop some programs to inform the residents about the cultural heritage of their locality because they can be much more involved in saving it. The same results show that the lack of a strong initiative from the community, leads to its non-involvement in establishing the patrimonial value of some buildings, regardless of the title of the property that strikes them. We protect for our benefit (Frînculeasa and Chițescu, 2018). However, the public interest in heritage knows a

continuous upward curve (42% know the heritage value of the analysed building). The presence of immovable property, such as Hall UPET, has far surpassed the mere tourist interest, being considered as an essential factor in increasing the quality of life (68%).

Hypothesis 1 is validated.

H2. The tourism valorisation of the industrial architectural heritage of Târgoviște creates the premises for tourist concentration poles' resizing

The city of Târgoviște, as a tourist destination, is known especially for its medieval historical monuments (ecclesiastical and vernacular) that have remained as testimonies of the domination of 33 rulers of the Țara Românească. Most form a tourist point of interest that is concentrated around the ruins of the Curtea Domnească și Turnul Chindia. There are also the most important museums of the locality, as well as recreational areas (Chindia Park and Zoological Garden). Thus, the main attraction pole is defined spatially, which is also the most exploited perimeter of the activities specific to the tourism phenomenon. The interdependence between the environment and society is complex, and the changes in their relationship are difficult to perceive (Grigorescu et al, 2020). The pressure exerted by the large number of tourists is felt by both residents and historical monuments. Dispersion of tourist points in different areas of the city leads to the diminution of the negative effects (for example, excessive noise, air pollution, increase of the amount of garbage, increase of the built area and reduction of the natural perimeters, degradation of monuments) as it considers 67% (for the residential area) and 59% (for monuments) of the respondents.

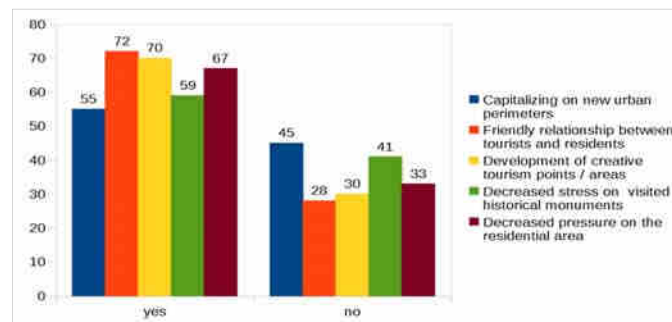


Fig. no. 3 Percentage interpretation of the second hypothesis' indicators

Source: authors' data processing study

The morphology of the areas is very important for tourists. Târgoviște is, except for the historical and commercial-tourist nucleus (Old Centre), a heterogeneous city from an architectural and cultural point of view, without a functional planning of urban tourism models. The revitalization of industrial buildings with historical-community value, located outside the established tourist bubble, creates multi-purpose spaces that allow interactions between tourists, workers and residents. UPET Hall is located in the centre of the city, in an area with complex development that contains a mixture of land uses (mall type commercial spaces, public market 1 May, housing blocks, public and private institutions, historical and spiritual monuments). The authenticity of the space, enhanced by the existence of such a building, is given precisely by the combination, in simultaneous arrangements, of elements with different history. This means that tourists have many options to experience the urban architectural form in detail, and residents to benefit from better services due to tourism. At the same time, the different lifestyle of the residents, their tangible and intangible cultural resources (the music they listen to, the art they consume and the day-to-day traditions) generate for tourists opportunities to accumulate cultural capital.

The tourist development of the UPET building (not only architecturally, but also exploiting the presence of creative producers) and its proximity to the city's major shopping centres

offers an attractive landscape of creative consumption and development (fashion, artisan and gastronomic products). This aspect is perceived and transmitted by 70% of those who participated in our research. The blurring of the boundaries between the consecrated tourist areas and those that mean the daily life of a city, by opening routes to different punctual cultural locations, allows friendly relations between tourists and residents (72%), and the development of organic and unplanned expression spaces of the tourist activity plays an important role in the development of the tourist experience (55%). Therefore, more poles of tourist attraction can be created, or the traditional one can extend its limits.

The validation of this hypothesis results from the high positive percentages offered to all the indicators.

H3. Economic and social stimulation may be the consequence of finding alternatives to traditional forms of tourism

The local community and the residents understand the benefits of tourism development through the alternative use of some areas that are not well used and which cannot be attributed to them, through the personal perception-age, education, cultural value. However, they are sensitive to the negative impact that the whole process of tourism valorisation- restoration, conservation, integration, through the necessary material and time resources- has on the community (61% consider that the costs of expropriation and restoration of the building are not justified). Speaking of a single building, although its utilitarian surface is quite generous, it was not regarded as an integrated element to a much more tender ensemble (for example a mall as thought in 2008 by a company so that in a relatively small percentage of respondents they think it can create opportunities for local businesses and new jobs for residents (48% and respectively 38%).

We consider that this interpretation is the consequence of human desire, specific to the society in which we live, that things should forward as quickly as possible, without a long-term vision. The lack of knowledge about how to exploit a cultural and cultural tourism objective makes respondents restrict the range of job-generating areas, also. Another high aspect was the fact that vacancies are not exclusively for the residents, they can be occupied by people who do not live in the city, according to the competences they require. The ways of exploiting the area, beyond its integration to the adjacent commercial space, can revive the businesses that promote local gastronomic (restaurants) or cultural traditions (exhibitions, educational events). The technical-urban infrastructure was not considered an important advantage (59%) offered by the integration of this building in a tourist circuit because the building is located in the city centre.

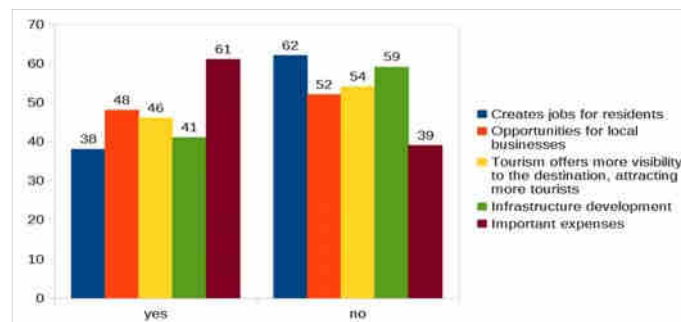


Fig. no. 4 Percentage interpretation of the third hypothesis' indicators

Source: authors' data processing study

Tourism is important for the city's economy, implicitly for the welfare of its inhabitants. The interviewed persons (54%) believe that finding new forms of tourist attraction will always be subsidiary to the one based on medieval historical values and should be ignored. Even if

smaller, the percentage (46%) of those who understood the importance of this aspect shows that the mentality of the local community evolves, it can understand the importance of any trace of the past, of its valorisation through modern modalities for personal and community benefit (Grigorescu, 2008). The social impact is harder to appreciate, being much more subjective (respondents were reported either on a personal level, either family or group, or community), but it can be understood from all the answers received in this section because anyone can have echo in the way of life and community organization, in family or personal relationships through the lifestyle and moral behaviour. Thus, the interpretation of the indicators partially validates the proposed hypothesis.

The integration of the industrial cultural heritage (UPET Hall) in a tourist circuit is validated by the respondents of our study. The lack of cultural concerns, the multivalent social experiences, as well as the identification with a certain type of monumental building (the medieval one) generates some resistance from the communities that easily; by understanding all the benefits obtained will disappear.

Conclusions

The current trends in tourism shape the social and economic behaviours of the touristic cities. The community is an important component in the management of this phenomenon, being the element of balance between these socio-economic and aesthetic transformations and the integrity of the cultural heritage. In this context, capitalizing on industrial heritage, as a slightly neglected resource in a city with a medieval iconic figure, represents a viable alternative for both the survival of this type of cultural element and a way to satisfy an increasingly sophisticated tourist and expecting a high level of quality and authentic experience. Urban aesthetics, well-being and identity preservation are important coordinates for the local community, which is a key marker for the sustainable development of the tourism phenomenon in Târgoviște.

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SCIENTIFIC INFORMATION AND THE INTERNET IN THE MODERN EDUCATIONAL CONTEXT

Răzvan Ion Chițescu¹, Mădălina Nicoleta Frînculeasa² and Daniela Băiașu³

¹⁾ National University of Political Studies and Public Administration, Romania

^{2) 3)} Valahia University of Târgoviște, Romania

E-mail: razvanric@yahoo.com; E-mail: madalina_chitescu@yahoo.com

E-mail: daniela_baiasu@yahoo.com

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Abstract

The Internet is an indispensable component of contemporary society. It plays an important role in everyday life by offering information and communication methods that it makes available to all those interested, especially the younger generation. Unavoidable, the educational field has taken advantage of these newly developed facilities and skills of students and teachers, promoting active mediated learning through state-of-the-art technologies. Information is the main vector of these transformations' dynamics, changing mentalities, amplifying possibilities and developing new types of educational interpersonal cohesion. Also, keeping boundaries and managing the risks of increasing information consumption becomes an increasingly difficult challenge to manage. Starting from these considerations, the research presented in this paper aimed at the relationship between the student and the scientific information that can be accessed on the Internet. The research results indicate the advantages and disadvantages arising from this interaction. That is by analyzing the relationship to parameters such as user profile, technologies used, sites accessed and how to use and capitalize the information.

Keywords

university education, Internet, scientific information, management

JEL Classification

I2, M15, L86

Introduction

Today's society is an ongoing challenge for education. Globalization and modern technologies change the pattern of teaching and learning, and the complex dynamics of interpersonal relationships and the diversity of everyday problems require the university educational process to rethink the socio-cultural paradigms according to which it works. Education

trainers speculated on the student's increasing predisposition to the virtual environment and the use of multimedia elements and developed projects and programs to obtain the advantages offered by the possibility of continuous, interactive training. In universities, traditional methods of education are undergoing rapid and profound changes. They have been gradually complemented, sometimes even replaced, by methods based on modern technologies that offer a wide range of applications and new perspectives for educational practice.

The e-learning environment capitalizes on the desire of Generation Z (those born between 1995-2010 as they are called by Seemiller and Grace, 2006) to accumulate knowledge quickly, through individual work, without significant effort. The variety of sources that allow fast access of information, simultaneously, by a large number of students can lead to an increase in the rate of knowledge acquisition for them, leading to benefits for the educational institution as well. However, the large flow of information available in the virtual environment, the ongoing updates and their fast wear and tear require careful manipulation of information. Selecting the correct information is a process that requires constant effort and collaboration of all people involved in the educational process. In this context, universities must take measures to ensure the correct management of data used by students through coherent rules and regulations or even by introducing courses on information culture.

The use of the Internet has become an increasingly used alternative for searching scientific information needed for teaching and research, not only for students but also for teachers. University teachers are stimulated and motivated by the possibility of accessing fresh scientific information resources, through open communication with researchers from around the world, by acquiring low-cost educational concepts and techniques, but also by increasing participation and interaction with their own students. The Internet becomes an important element of the modernization of university education because it has the real capacity and power in substantiating and consolidating the evolution of this system and the general socio-economic development (Figure no. 1).

An open university educational space offers many beneficial perspectives - easy, fast and cheap access to learning materials, new information, offers the student the opportunity to choose the content and tools appropriate to their interests. Therefore, the management of the selection and capitalization of information, as the main force of the new education, must be integrated into the instructive-educational process to cope competently with change and all the elements that accompany it - uncertainty, adaptation and innovation.

The Internet has become the great scene of scientific debate. The fall of geographical and communication barriers has led to its transformation into the largest market for scientific information. Research and education institutions, publishing organizations, scientific societies and independent researchers overcrowd daily, through the huge amount of information released, this space - specialized sites, with databases, portals, forums, blogs, transforming the user, one by one, in creator and consumer. This continuous oscillation, often imperceptible, creates, through the multitude of directions of choice and the desire for visibility, ambiguity. Thus, in terms of quality and validity, it is difficult to select the information needed for a particular context, and managing and controlling a huge daily flow requires new skills and responsibilities.

The importance of selecting and capitalizing on scientific information that appeared in the online environment in the process of university education, in its multitude of forms and with its various purposes and missions, appears more and more strongly in the literature. Thus, we mention some recent achievements that are either the subject of open educational practice by developing e-learning programs adapted to the specifics of disciplines (e.g. Open Access Publishing, Free and Open Source Software), where scientific information is controlled (Lane and McAndrew, 2010; Scanlon et al., 2015; Vilceanu et al., 2019; Mayer, 2019), or the problems of frequent and uncontrolled use of information on cognitive ability or the process of accumulation and transmission of acquired knowledge (Buff and Burr, 2018; Carbonell et

al., 2018; Seemiller and Grace, 2016, 2017, 2019; Feng et al., 2019) or how to combine traditional with online resources taking in consideration the students' adaptation to new socio-economic conditions (Lyons, J. 2019; Mata, 2019; Stan, 2019).

In this context, the approach to the issue of correct selection and use of scientific information taken from the Internet is currently regarding the socio-economic period we are going through, in which the reconceptualization of the education system is no longer a desideratum, but a certainty.

Research methodology

The field of natural sciences generally aims at learning through exploration and application. Observing and researching the environment, the phenomena and processes that define its components involves a multidimensional approach of which the most important part is the application (eg, collection of samples-fossils, minerals; measurements-topographic, meteorological, hydrographic; useful mineral substances, tracking processes with slow or rapid evolution -landslides, volcanic eruptions, tsunamis, rock falls, earthquakes, extreme weather and hydrological phenomena and establishing their effects on nature and population). Specific tools are used. Thus, the use of scientific information on the Internet must be done by relating it to the natural environment, by direct observation. Often this cannot be done, checking the information in printed texts or assumed by well-known specialized authors is mandatory.

The purpose of the research and the working hypotheses

The purpose of the research was to identify the way the student reports to the information accessed on the Internet and capitalized in the academic training process.

H1. Students access the Internet more than 75% of the information needed to complete an academic program;

H2. Selection, as a stage in the process of acquiring information accessed on the Internet, does not exist.

H3. Students are open to active education and are aware of the benefits of a secure information environment on the Internet (eg online libraries, specialist websites, magazines and teaching materials).

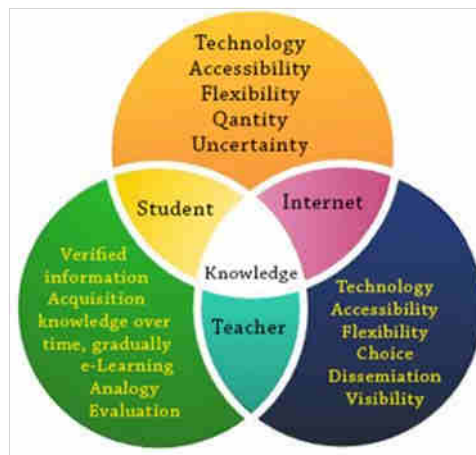


Fig. no.1 The relationship between Internet-Student-Teacher and Knowledge/Scientific Information

Source: Authors

Data collection was carried out between May-July and November-December 2019. The questionnaire was used as a tool. It included 12 questions grouped into 4 broad categories and aimed at:

- the type of technologies used, their frequency of use, the main purpose of use, the motivation of use;
- the type of information sought, the form in which they are used, how to capitalize on them, verification and selection;
- knowledge of specialized sites, frequency of accessing them, academic ethics in using information;
- use of educational platforms, enrolment in online courses, attitude towards active education.

Participants

The research is part of a much more complex study aimed at new learning techniques in university education. For the segment presented in this paper, 337 students from specializations in the field of natural sciences were interviewed, from several university centres in Romania (Bucharest, Targoviste, Ploiesti). They are from all the years of study of the two cycles of education, bachelor and master. They are between 19-27 years old (the range 19-22 has the highest share - 71%), and as a gender distribution 32% boys and 68% girls.

Results and discussions

1. Technique and technology

Technological development has allowed, more and more, the opening of the general public to the resources offered by www through the internet. Through increased connection stability, the new generation of information technology allows simultaneous access to an increasing number of users, and through text and video communication applications (eg e-mail, discussion forums, hypertext, video streaming, video conferencing, multiplayer online games) social interactions take place in a much more popular and animated virtual world. The great variety in the use of technology also affects the educational field. Modern methodologies based on these technologies are emerging that change the teaching-learning educational practice. The tools used (e.g. ERP, CRM, Microsoft Office Applications, Google Applications, Google Docs) are increasingly performing and allow complex applications. The equipment (computers, tablets and smartphones) is widespread and easy to handle.

Analysing the data extracted from the answers received, it is found that 92% of respondents use at least one mobile device (98% smartphone and 86% tablet/laptop) with which they have an Internet connection. They also use it in college and at home, although 61% of them also have a computer. It is mainly used for social networking (87%), they are familiar with Facebook, Google+, Twitter, Instagram, studentie.ro, linkedin.com, etwinning.net, iTeach.ro etc. None of them could specify exactly how many hours, is estimated, on average 6 hours. It is used both during classes or seminars, often unrelated to their content (23%) and during school hours, in public transport (69%), during relaxation or solving study topics (67%). 54% check the phone at the same time as another device on which they carry out a professional activity. Seemiller and Grace (2016) consider that the excessive use of smartphones is reflected in the low ability to concentrate and attention is due, in their case-generation Z, to the phenomenon known as Fear of Missing Out (FOMO). 85% consider that one of the main advantages of communication is the knowledge that results in obtaining a large amount of information necessary for the learning activity.

The technical element is the most difficult to master. Compatibility or connection issues being among the most mentioned (87%).

The emergence of information technologies has favored the development of active e-Learning projects, being one of the main educational tools to support.

The Internet is an inexhaustible source of information. All the subjects are covered. Anyone can publish and use anything. But navigating this ever-expanding information environment is a challenge that not all of us can respond to promptly and effectively. Curiosity leads to continuous search, pushes the limits of demand, and leads to changed perceptions of reality. But this is specific to the information society in which we live. In this context, education refreshes your foundations based on this huge amount of information that changes the world (Grigorescu et al, 2016). The university is a space for the development and training of the people of the future. How does the student relate to information? How does he use or capitalize on it? Does it give him advantages or not?

The student benefits from multiple advantages by using the information on the Internet. For the respondents these were: accessibility (89%) - meaning the possibility to access numerous sites from where to obtain information, sometimes in real time, in the comfort (85%) offered by the home-without running through libraries, but on the day and time he needs -flexibility (79%).

2. Knowledge/Information

The Internet promotes easy access and review of data and allows information formats that are not suitable for print media, including high-resolution images, moving video, animations, simulations, and the program's source code (Dellavalle et al., 2003). The respondents of our study state in a proportion of 96% that they use www to find the information necessary for the academic and professional training process. Look for information for consolidation (after hearing a course) 53%, for completion - 49% or because they need - 72%. Everyone considers that the information sought in these contexts is scientific information, even if it is accessed from news sites, blogs, vlogs or published on social networks. The study shows that her students are looking for materials in Romanian (79%), even though there are numerous translation programs. The specifics of the disciplines lead to accessing, in particular, the sites where there is also graphic material (68%). Lack of practice in making graphic materials (e.g. maps, sketches, profiles), inability to photograph something real (e.g. a volcano during the eruption, a plant that grows in the specific Arctic ecosystem, changing a landscape as a result of a tsunami) or the visual aesthetic impact, directs the search for information posted by specialists in the field or, in any case, people who have a touch with the earth's sciences. And there comes the slight relaxation regarding the correctness of the data used by the student. However, many of the respondents are not guided by the one who assumes the information (23%), but by the quality of the materials in terms of image or the development of an accessible discourse in the presentation of the topic (77%). The use of information is generally done for the realization of topics in courses or seminars/practical works (for example, ppt. Presentations, papers, projects) - 92%, or for dissertations (bachelor, master) - 43%. Most of the time, the information is used in the form in which it is found, unprocessed by a personal filter (74%) or verified by searching the primary source and tracking logic of the scientific approach (91%).

Critical information analysis-qualitative assessment of information sources and an assessment of sources' relevance for information requirements is unimportant for many (73%). 72% do not think about what type of information is (eg primary, secondary, general, scientific), nor whether it is relevant to what they are looking for, even if the context-source in which it is found concerns the subject sought (81%), nor who is the author (79%), the date of publication (83%) or the target group for which the text is written (93%). It is therefore observed that the authenticity of the information is not a priority for the student. However, critical evaluation of information before use requires all the skills it forms over time and the user's ability to discern is difficult to test by the multitude of information sources

3. Sources of information

Access to scientific information in the online environment is considered an advantage for students. The science community understood the opportunity offered by the Internet and adopted new technologies in the process of research, communication and information transmission. The classic way of publishing, accessing and disseminating scientific information has changed. All journals, scientific or popular, now have sections for digital publication, conferences and symposia make public the debates in the online environment, and the results of research contracts are posted on the official pages of the institutions. But not all of them are free. Much of the information costs, however, for students it can be covered by university subscriptions, grants or other forms of funding. Supporting the way of capitalization on the Internet appeared the form of Open Access through which information became a common good of all users, obviously under certain conditions imposed by ethics and copyright. *"Free access has a future. Introducing research results into the public sphere is beneficial to science and strengthens our knowledge-based economy."* (Máire Geoghegan-Quinn, European Commissioner for Research, Innovation and Science, 2014). The internet user can find a substantial amount of work data for any subject, the numerous specialized sites being the guarantor of correct and quality information. Among the best known: Public Library of Science (PloS) which offers free access to its journals (information can be used under the Creative Commons Attribution License); PNAS (Proceedings of the National Academy of Sciences of the United States of America) which, based on a subscription, allows access to advanced research reports, colloquium papers, scientific materials of the US National Academy of Sciences; BioMed Central provides free access to scientific articles from the 241 journals it sponsors; science.gov is the gateway to over 2100 other scientific sites in addition to numerous databases and millions of pages of information. Alongside these are the websites of research and educational institutions, libraries, professional scientific organizations, publishing houses and personal blogs (for example, UCS, AAAS, IEEE, IEEE, NESTA, AIBS, AIP). There are academic communication networks such as Academia.edu, Researchgate where researchers from around the world disseminate the results of their research.

Asked if information from this type of site is used, 38% of students answered positively. The others (62%), although they knew them, motivated the lack of interest in these sites by the fact that the material contained in them is too scientific, rigid, often super specialized. They preferred (71%), for example, the Internet sections of channels such as National Geographic, Nat Geo Wild, Discovery, Nova, and Animal Planet. They mentioned (87%) that the teachers directed their use to specialized sites, but they were only used occasionally (only when the exact name of the article was requested and indicated, the researcher, the journal, not the general topic). 63% did not know the research of their faculty teachers posted on the Internet. Each research article presents the status of the research at that time and generates multiple directions of documentation. A large amount of information that can be accessed leads to new research generates, in a very short time, other information. The information is perishable, and the warranty period is getting shorter. Under these conditions, returning to primary sources is increasingly difficult and leads to wrong citations. On the other hand, the increased dynamics of research and assertion generate inappropriate ethical behavior.

The respondents of this study acknowledge the use and capitalization of information without respecting the rules of academic ethics (78%). They do this either out of ignorance or because the information is not assumed by anyone. Plagiarism is not a concrete notion for them (87%), even if everyone, generically, knows what it entails. 84% consider that the information accessed from www is free, and therefore can be used in the same way and 72% believe that plagiarism can be reported only in published (and printed !!!) works such as articles, books, doctoral papers, dissertation or license. The students in the first and second year, as well as the ones in the final years of studying in-depth, at the master, approached the same way the

use of information, although our expectations were different (we consider that going through an academic cycle is a plus responsibility for the use of scientific information).

4. Active education

The expansion of information and communication technologies has led to the extension of learning environments in universities. Distance education, e-learning and virtual universities are the new results of the application of technologies in the educational process. E-Learning is the new educational environment, modern and collaborative, which combines traditional teaching methods with those based on IT. The distance delivery of education, the creation of communities with an already increased appetite for online networking, low costs and freedom of action, diversification are the main advantages of this modern type of learning.

Beneficiaries of some of them, students are aware (91%) of the influence of technology in all academic and professional activities. They appreciate communication (82%), the possibility to choose the type of device used (87%), interactivity and course dynamics (77%), virtual communities (74%), evaluation method (72%). Educational platforms offer an interactive and integrated, learning-centred environment developed for the benefit of both the teacher and the student. Universities have adopted various models (e.g. Teams, Moodle, LearningON) or developed their own models. In the three universities there are learning on distance (DL) departments that successfully use this type of learning.

As the chosen target group consisted predominantly of full-time students, only 29% of them constantly mentioned the use of an educational platform. The need for niche specializations in the chosen field or part-time work in another field during college made a percentage of 31% of students to participate in online courses 21% in podcasts and university lectures, 23% in webinars. Overall, the attitude of students towards this type of teaching-learning was favorable (94%) by being aware of the benefits of a secure information framework.

Analysing all four points we validate the working hypotheses. Students use a large amount of information obtained from the Internet, unselected, use it in academic training, but are aware of the risks and benefits of this process, which, with the development of technology and equipment, has become a part of life.

Conclusions

The information explosion has completely changed the way we perceive and relate to the world. Information is the mobile of these transformations, and the Internet is the main source where it is found. The natural sciences have a growing presence in the huge field of information stored in this space. Sites, discussion groups and education programs invite knowledge and development, so the consumption of information. Searching the www is not without difficulties neither for students nor for teachers. The selection and correct use of information obtained from this environment have gaps in the algorithms it imposes, and this leads to certain uncertainties, especially in scientific capitalization. Scientific information needs to be evaluated, but this depends on everyone's ability to counterbalance easy access to information and the uncertainty given by the speed of transmission of the new and wide variety of sources available to us.

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CASE STUDY ON HEALTHCARE REPORTING

Iulia Oana Florea¹ and Liliana Nicodim²

¹⁾*The Bucharest University of Economic Studies, Romania*

²⁾*“Ovidius” University of Constanta, Romania*

E-mail: oana.stefanescu@stud.ase.ro; E-mail: nicodimlili@yahoo.com

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Abstract

The purpose of this paper is to emphasize that financial fraud does not only take place into an economic environment, such as financial institutions or economic entities, profit-making companies, but also into the healthcare system. Healthcare providers usually work to improve patient's health and are honest entities; however some of them use ways to increase their income/profit illegally. This paper will try to highlight the primary health care schemes and how they wrongfully make use of public funds.

The healthcare system is in continuous change in the light of the economic depression that is to follow after the COVID-19 pandemic, and the expected cutbacks in budgets in all the sectors create anxiety among physicians and healthcare institutions. This case should be a wake-up call to all physicians and medical institutions that when facing financial uncertainty, their responsibilities should be providing medical welfare for the patients but also to act financially responsible. The information should also be used by the enforcement institutions, which should keep in mind that in times of economic depression, healthcare institutions and medical providers are no different from economic entities in terms of financial fraud possibilities.

Understanding these schemes can help enforcement institutions adopt more efficient ways of action when fighting against the ever-changing threats of organized crime and fraud.

The methodology used for this paper is mostly made of scholarly articles and articles relevant to the topic in discussion retrieved from the web as sources of information.

Keywords

Financial fraud, Fraud, Healthcare Fraud, Organized crime

JEL Classification

K42, I18

Introduction

Healthcare fraud is a serious matter that affects every one of us. This kind of fraud generates considerable damage to individuals. Healthcare fraud involves deception in health insurance, deceptive billing of hospitals for unprovided services, and exaggerating medical services

(Rudman et al., 2009). Health professionals or their facility submitted application forms to the government and the treatment insurance agencies (Thompson, 1992), which were never issued, and there was no supporting evidence in the relevant patient files. The schemes listed above require some efforts, additional dates, and codes on the claim forms, to make the scheme credible.

This fraudulent conduct causes substantial financial losses in the number of billions of Euros of annual loss and severe damage to the patient. Identifying fraud in the healthcare system, therefore, becomes an urgent challenge to prevent corruption and misuse of public funds. Romania's national health expenditure, as in % of GDP, was 5% in 2016 (World Health Organization, 2020). Compared to other countries that might not be a significant percentage, but considering that Romania is a developing country, this percentage suggests enough of a reason to pay more attention to the healthcare system fraud.

The practice of fictitious diagnoses - diseases added to the people who come to the hospital with various problems and for which the state pays, patient by patient, inflated bills - has a devastating effect: artificially impoverishes the system, intoxicates national health statistics, inflates public procurement of drugs, generates seizures.

"We are a sick nation because sometimes we invent diagnoses," admits the current Minister of Health (Ilie, 2018)

1. Healthcare fraud schemes

Unscrupulous providers will charge for additional treatment if they announce fake serious illnesses or procedures that have been carried out. For example, if an elderly patient allegedly fell inside a nursing home, a crooked provider may deliberately misdiagnose her with head trauma requiring the (unnecessary) use of computer tomography (CT) scan or/and blood tests. There are endless ways for false provider statements in poor health for the elderly or patients with severe mental disabilities.

Specific diagnoses require more extended, more expensive stays in the hospital. Unbundling is one of the most common error reporting procedures. Unbundling means charging a detailed code plus more part codes, instead of just one, that would compress all the others. For example, for a hysterectomy, one would pay 1300 USD. When unbundled, the operation would be made up of the first 1300 USD, plus 950 USD for the ovaries and Fallopian tubes removal, 671 USD for the abdomen exploration, 250 USD for the appendectomy, and 550 USD for the "lysis of adhesions." The new total is 3721 USD, instead of 1300 USD (United States Department of Health and Human Services Office of Inspector General and the American Health Lawyers Association, 2007).

Overutilization of services includes billing for services that are not needed – such as completing and charging for an unnecessary investigation. Unscrupulous practitioners use this technique to hypochondriac patients. Tests and examinations can continue indefinitely or at least as long as a patient can afford to pay for the investigations. Rehabilitation centers for drugs and alcohol users are suitable for overuse.

As per Global Study on Substance Use and Health, "in 2011, 21.6 million persons aged 12 or older needed treatment for an illicit drug or alcohol use problem. Of these 2.3 million received treatment at a special facility" (National Institute on Drug Abuse, 2018). There is obviously much potential for fraud in this field.

Like all industries, the healthcare industry's potential for corruption is great. Providers were found to unlawfully pay for referrals and/or accept payment. Obviously, when referrals are made for facilities that are not really required, such as X-rays, MRIs, prescription medications, the practice can be misused.

In order to prove the bribery/kickback scheme, you have to set the "quid pro quo." It is essential and not very convenient to claim that the provider charged or received anything of interest in exchange for referrals. Sometimes the kickbacks or bribes are hidden or disguised

in the form of luxury holidays, discounts on property rentals or hidden gifts compared to quietly slipping something under the table.

False or unauthorized issuance of prescription drugs. The abuse of prescription drugs is often characterized as taking prescription drugs (prescribed or not) for reasons beyond the wishes of physicians. The number of US people who misuse managed prescription drugs almost doubled from 7.8 million in 1992 to 15.1 million in 2003, according to the study (Center on Addiction, 2019).

The most widely abused medication is pain. The street value of these medications is almost ten times the prescribed value. Media around the country often report thieves robbing pharmacies to get painkillers at gunpoint. Tips for crime prevention also show that homeowners should make sure that visitors, particularly children and adolescents, do not have unwanted access to the prescription of the occupants.

Some patients visit several doctors, without them having any idea, in order to obtain prescriptions for the medication, particularly painkillers. Through selling the medication on the market, fraudsters can quickly recover the costs of medical visits and filling prescriptions. Even some employees of the medical facility were notorious for stealing prescription paper pads and forging prescriptions and doctor's signature. Others think they can adjust by pen the quantity or the permitted refill amounts.

2. Case study at an Infectious Diseases Hospital in Bucharest

2.1 Patients experience description

Fictitious diagnosis is a systematic method of fraud of the National Health Insurance House (CNAS). To the real ailments of patients, the ones that bring patients to the hospital, and which doctors discover at specific consultations, the statistical department of the Institute also adds a set of fictive diagnoses.

One patient, a Bucharest resident, woke up one morning in the summer of 2016 with terrible diarrhea. She was hospitalized at the "Matei Bals" Institute. A series of medical tests were done, and she was given some pills to slow down her intestinal transit. Nothing complicated, just enterocolitis. However, her diarrhea, officially exploded in the hospital documents, and in her medical history, which statisticians from the hospital loaded with an impressive collection of diseases (fig.no.1).

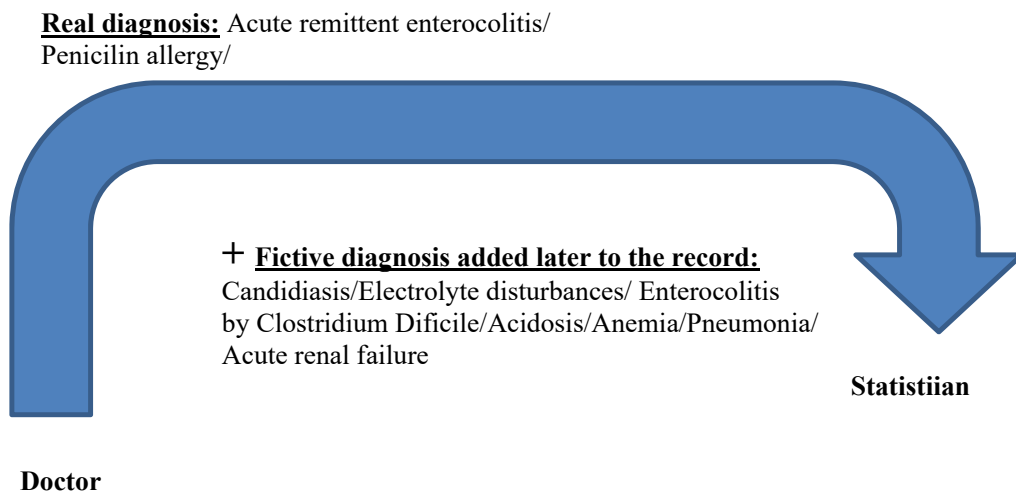


Fig. no. 1 Doctor – statistician disease trajectory

Source: Ilie, 2018. *The Institute of invented diseases*

Most of them are invented. There are four times more diseases than in reality, all with a direct effect on the woman's health care. In other words, for diarrhea that cost 100 Euros as treatment, we all paid 1000 Euros. Below you can read the doctor's answers for each additional disease (fig. no. 2).

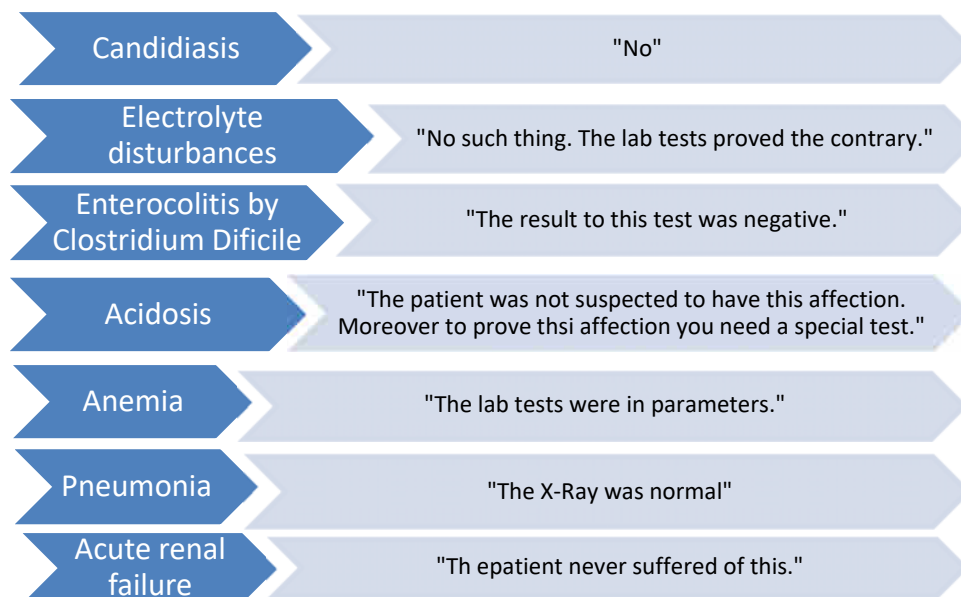


Fig. no. 2 Doctor's answer to the added diagnosis

Source: Ilie, 2018. The Institute of invented diseases

Another patient, female, 32 years of age, came in for a fungus in her mouth. Foot-and-mouth disease and acute angina with erythematous pultaceae, the doctor noted on the sheet. However, she also left with pneumonia, with the inevitable Candida, sinusitis, but also a urinary tract infection. Neither she nor her physician knew about all those other diagnoses. "Where are my diagnoses?" asked the doctor? "The woman had something for which I made some recommendations for discharge. They have completely disappeared from the coding. It turns out she was hospitalized for something else." (Ilie, 2018)

Also, in the summer of 2016, Sorina, a 14-year-old girl, came to the hospital. She also had problems with her stomach. This time it was Salmonella, but the infections put her on her feet. However, at the statistics department, things looked much worse: Sorina had "additionally" pneumonia, Candida, anemia, and some other bad news.

Ion has a serious, confirmed diagnosis: cirrhosis caused by hepatitis C. However, he also remained in the "Matei Bals" archive as an official carrier of hepatitis B. "It is something that I wrote in the observation sheet, and another thing codifies in statistics. This man also has two diagnoses, on paper, that cancel each other out: thrombocytopenia= few platelets and thrombocytosis= many platelets" a veteran doctor from the Institute is looking amazed, at the vitiated medical history of one of the patients who passed through his hands, but which Statistics processed more expensive for the state.

The fraud scheme is starting with transmitting, in electronic format, to the institutions that manage public health policies and budgets, something different then what the doctor signs in his observation sheet. Everything is in electronic format except for the physical observation sheets. They do not dare to "fill in "on the doctors.

Only in 2016, the year in which the above patients were hospitalized, the “Matei Bals” Institute reimbursed 21 million Euros to CNAS, based on the officially communicated diagnoses, for the patients treated in the hospital.

From the amount above, 1000 Euro came for the 32-year-old female, the patient mentioned above, although the bill for diarrhea did not exceed 120 Euros.

2.2. How the Coding System works

In 1893 the International Institute of Statistics introduced the first formal classification of diseases. The method was based on the Bertillon Causes of Death list, created by Jacques Bertillon, a French statistician, and demographer. Originally developed as a classification scheme for health care, the International Classification of Diseases (ICD), includes a set of diagnostic codes for the diagnosis, providing a complicated classification of a wide range of signs, symptoms, pathological findings, grievances, social circumstances and possible causes of injury or disease (National Center for Classification in health, 2002).

Romania adopted ICD-10 in 1994, and since then, 33 additional countries joined them since that time.

This system is also used as financial regulation of services which are reimbursed to hospitals by the state or private insurers. Over time, the mechanism has become increasingly sophisticated, a public health accounting system, a strategic target governed by organic legislation, protected by special services, controlled by an autonomous agency. Nevertheless, as in the community library, the basic concepts remain simple: classification, standardization, archiving.

Every patient is a number. The disease they suffer from has a code. The medicine they are prescribed has a number. The doctor's initials are also registered. The pharmacy where the patient buys the medicine is also specially classified. We are all numbers, rows, and columns in the Unique Integrated Health Insurance Information System (SIUI), administered by CNAS and technically managed by the Special Telecommunications Service. SIUI is a matrix with the history of diseases in Romania. The ultimate source of medical statistics. It stores the data of each and one of us, with or without insurance (Romanian official Gazette, 2009).

When admitted into the hospital, every patient has an observation sheet. The information on the observation sheet is entered in the SIUI. At that moment, the patient code (ICD), the 20 digits code that the state automatically and randomly distributes to you, based on the Personal Numeric Code (CNP), is associated with the system with the specific code of the disease. This is how a patient enters the algorithm. When stopping by the pharmacy on the way home, two data streams are coupled immediately when the pharmacist records the prescription. The prescription, as well as the prescribed drug, is serialized and numbered. Both information (hospital-pharmacy) creates a unique association in SIUI, contributing to the complex map of each medical incident. Another line in a case but containing 70 types of information (fig.no.3). Every hospital falls into the classification. What counts in the rating is the established success along the way, the severity of cases that could be treated by the hospital. All are assessed: number of beds, rural, urban, occupancy, human resources, or logistics. The connection is made using a so-called Case Mix Index (CMI). The larger the hospital, the bigger the Index. For example, the “Matei Bals” Institute has a CMI of 1,6184 because it handles complicated diseases like HIV or hepatitis, has laboratories of research, emergencies, and a university department.

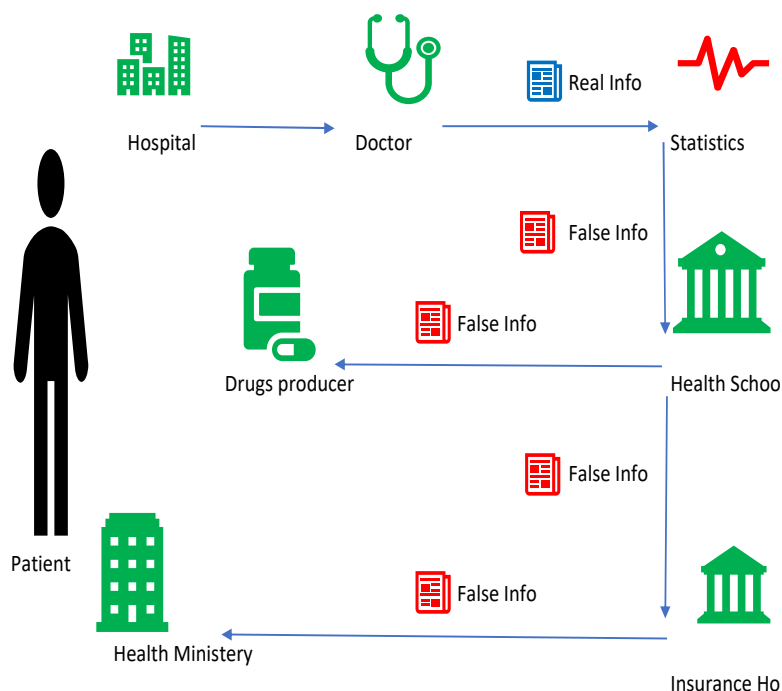


**Fig. no. 3 The route of patient's information and the vitiation points.
From doctors to institutions.**

Source: Ilie, 2018. *The Institute of invented diseases*

The Buhusi City Hospital, with one working physician, has an index of 1,0548 (Duran et al., 2017). The computer confirms all the above variables with the estimated price of a medical operation, whatever their existence, and obtains a patient's Relative Value (RV), a "coefficient assigned according to the relative amount of work, consumables and capital resources required for the complete treatment of the patient with that condition" (Indaco, 2001).

Another value that the system works with is Weighted Case Rate (WCR). For example, the "Matei Bals" Institute has a WCR of 1800, while the Buhusi City Hospital has a WCR of 1444 (DRG Grouper, 2012).

Payed amount = CMI (Case Mix Index) x WCR (Weighted Case Rate) x RV (Relative Value). Thus, the funding difference for the same pathology in different hospitals can reach up to 70% of the funding (DRG Grouper, 2016).

The fraudulently inserted fictional diseases in a man's name increase his Relative Value, which significantly increases the sum the state pays for him. The hospital substantially inflates the bill (fig. no.4).

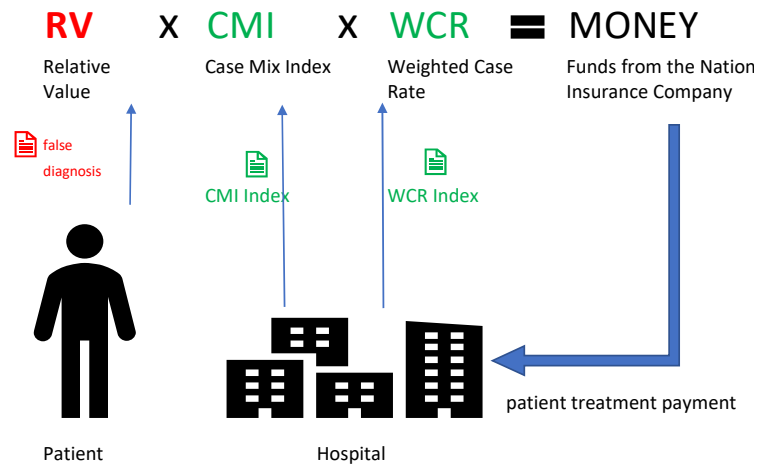


Fig. no. 4 Patient treatment payment inflating scheme

3. Consequences

Statistics is essential science, derived from the theory of the mathematical probability, which analyzes vast quantities of data and applies to almost every contemporary field. It reacts to a fundamental human goal: foresight, the natural need to predict, to be prepared. For decades, humans have studied the evolution of diseases. In this case, Corruption defeats Science. With severe short-term effects. The illness imagined in the “Matei Bals” Institute compromises the statistics. The immediate effect would be relying on false data for predicting the medical and health future of the population. Another side effect would be taking the wrong decisions based on false data, thus not being prepared in severe illness cases.

Conclusions and recommendations

The lack of regulation of hospital coding has caused a gap in monitoring the reporting of diagnosis. The final result is that we all seem a profoundly sick nation, with many added diagnoses. This field needs more resources (human and financial) for enforcement of the law, better monitoring, and evaluation, in order to achieve a better distribution of the funds towards the hospitals.

Secondly, a unique indexing system would be helpful, by eliminating different financing methods, resulting in two different payments, to two different hospitals, for the same procedure.

Aknowledgement

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FINANCING THE ORGANIC FARMING SECTOR IN THE EUROPEAN UNION - THE CHALLENGE OF THE COMMON AGRICULTURAL POLICY

**Carmen-Elena Dobrotă¹, Carmen-Mihaela Boteanu²
and Elena-Daniela Rebega³**

¹⁾ University of Bucharest, Institute of National Economy, Romania

²⁾ Valahia University, Romania

³⁾ The Bucharest University of Economic Studies, Romania

E-mail: carmen.dobrota@faa.unibuc.com; E-mail: carmenboteanu@yahoo.com

E-mail: dana.rebega@yahoo.com

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Abstract

The Common Agricultural Policy has undergone successive reforms in the almost six decades since its creation, trying to respond to climate, environmental and economic challenges. The development of organic agriculture benefits from being supported by European funds through the European Agricultural Development Fund - the instrument through which the Common Agricultural Policy is implemented. The objective of this study is to analyze the method in which agricultural practices beneficial for climate and environment were financed in the 2014-2020 programming period, through Rural Development Programs at Member State level, respectively accessing financial support from Measure 11 for conversion to agricultural ecological practices and for their maintenance. The collection, processing and correlation of relevant data, through quantitative and qualitative methods, revealed the stage results obtained, the main difficulties encountered and the lessons learned, confirming the hypothesis that the European Agricultural Rural Development Fund contributed to the development of organic agriculture in Romania, the directions in which financial support could be more effectively targeted in the 2021-2027 programming period being highlighted too.

Keywords

Common Agricultural Policy, rural development, organic farming, European Agricultural Rural Development Fund

JEL Classification:

F63, Q01, Q14, Q18, R11

Introduction

At European level, the contribution of organic farming to the reduction of the effects of climate change was acknowledged, but it was also recognized for the contribution to the achievement of the objectives of the *Europe 2020 Strategy* in terms of sustainable growth, to the implementation of the *7th Environmental Action Program in 2020 regarding the practice of a lasting agriculture through sustainable management of natural resources*. The importance of supporting this sector was enshrined in the *European Action Plan for Organic Agriculture* (2014) and the need to allocate European funds especially for the development of this sector was materialized by the reform of the Common Agricultural Politics (CAP) in 2013, implemented in 2015. The allocation of European funds to support organic farming and the positive, negative, direct or indirect impact of the use of these resources has been the subject of several analyzes. European Commission (EC) studies revealed that in the period 2014-2020, European funds supported the development of organic farming to a greater extent than in the case of conventional agriculture (Directorate-General for Agriculture and Rural Development, 2019, p.127). However, there are critical analyzes that show that the CAP objectives and instruments have not been clearly defined, not transposing in practice the expected synergies and complementarities between Pillar 1 and Pillar measures (Hart et al., 2018) proposing changes, through several scenarios, in the sense of more visible contributions to environmental protection and the fight against climate change (Hart et al., 2016), as it seems that the CAP has not yet succeeded in adequately promoting the transition to more sustainable agriculture, in the absence of better defined indicators that be able to measure the impact of interventions, beyond the number of farmers or the size of the areas that received support (Hart et al., 2018). Romania's potential in the development of organic agriculture was analyzed (Dobrea et al., 2018), the conclusions being that there is an upward trend in production in this sector (Chihaiia et al., 2006), generated by the demand for organic products from consumers, thus outlining an alternative to conventional farming practices that have not achieved in all sectors the benefits expected through CAP support (Marcu et al., 2015). Being still in the programming period of European funds 2014-2020, we appreciate that at this moment a quantitative analysis of the impact of the use of funds for the development of organic agriculture in Romania can be made, using the data provided by the Ministry of Agriculture and Rural Development (MARD) which is the Managing Authority for the National Rural Development Program 2014-2020 (NRDP) through this sector was supported. The hypothesis that was started was that the CAP reform and the funds allocated through the NRDP to the organic agriculture sector contributed to its development.

Organic farming in the European Union

Organic farming is known as the method by which food is produced with substances and by natural processes. Concerns at EU level to identify solutions to support the rapid rise of organic farming have been aimed at both improving the legal framework and providing financial support for the development of organic farming by allocating funds mainly from the European Agricultural Rural Development Fund (EARDF). At the level of the European Union (EU), the field of organic farming has been regulated since the 1990s (Council Regulation (EEC) No 2092/91, 1991), so that later, by successive rules, the basic requirements regarding the production, labeling and control of organic products in the plant and animal production sector (Commission Regulation (EC) No 889/2008; Commission Regulation (EC) No 1235/2008) were implemented. The set of EU regulations has been developed in order to provide a stable structure for the production of organic products in all Member States, thus responding both to consumers' trust in the production of organic products and to the demand of producers, distributors and traders to benefit from an equitable market. From the beginning of 2021, new European regulations will enter into force ensuring both a control system for organic products that will increase consumers' trust in the organic farming system and new

rules for producers that will support the transition of smaller farmers to production methods. and the possibility of marketing several types of products as organic products. (https://ec.europa.eu/info/food-farming-fisheries/farming/organic-farming/organics-glance_ro).

Financing organic farming become more visible since 2014, when it was first addressed in a separate article, namely Article 29 of Regulation (EC) No 882/2004. 1305/2013 of the European Parliament and of the Council, which established the character of a separate measure (Measure 11) in the national rural development programs. Conversion means the transition from non-organic to organic farming over a period of time during which the provisions on organic production have been applied. Maintenance is the period during which the provisions on organic production have been applied. At the same time, organic farmers have been recognized as "organic by definition" within the meaning of the direct payment support scheme, having the facto right to the greening payment. Furthermore, significant support for the development of organic farming has been estimated to be obtained from the obligation for EU Member States to provide for a minimum expenditure of 30% of the total contribution allocated to each rural development program for those measures that address related issues. environment and climate, including measures for organic farming. (https://ec.europa.eu/info/sites/info/files/food-farming-fisheries/farming/documents/organic-action-plan_ro.pdf).

Organic agriculture in Romania

The conversion to ecological practices is favored by the relatively low level of pollution in Romanian agriculture. The agricultural areas and the number of operators that adhered to the ecological standards registered a constant growth rate in the period 2010-2013 and subsequently 2016-2019 (Fig. no. 1). The causes of the decrease of the number of certified operators and of the ecologically certified area from 2013 to 2016 are associated with factors such as conversion costs, annual pre-registration procedure at county agricultural directorates, the ratio between production and price, lack of sales framework for organic products or difficult access to organic seeds. Since 2015, the decrease is also explained by the expiration of the multi-annual payment commitments / and the need to renew them. (Regional Diagnosis, 2017). The increase of areas after 2016 shows the potential of the organic farming sector in the coming years but also the effect of the support provided by payments to farmers through PNDR 2014-2020.

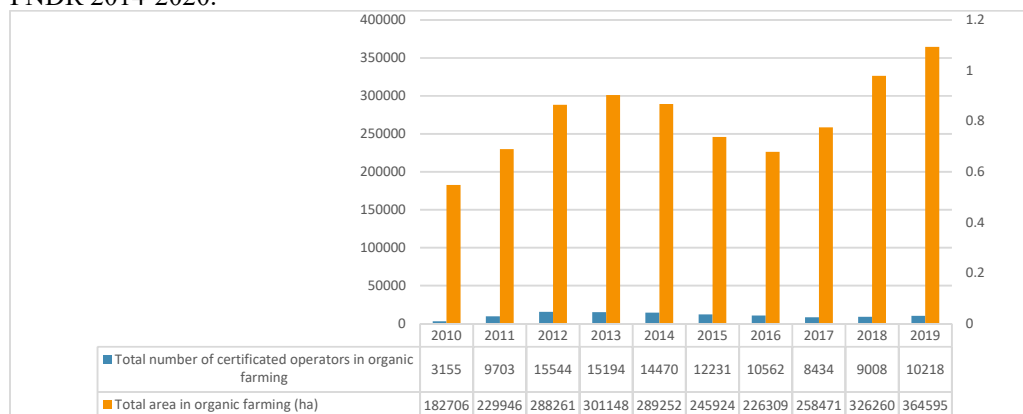


Fig. no. 1 The evolution of certified operators in organic farming and the total cultivated areas of organic farming in Romania in 2010-2019

Source: data processed by the author based on information provided by the Ministry of Agriculture and Rural Development.

The Common Agricultural Policy and the development of organic farming in EU

The CAP is one of the EU's main policies, evolving in the last half century with the construction of Europe. The objectives of the CAP were established by art. 39 of the TFEU, being reorganized to the reform of this policy, applied since 2015, in three directions: reliable food production; sustainable management of natural resources and climate policies; balanced territorial development. (<https://eur-lex.europa.eu/legal-content/RO/TXT/HTML/?uri=CELEX:52018PC0392&from=EN>). CAP funding has been provided over time by a single fund, the European Agricultural Guidance and Guarantee Fund, which has been replaced in 2007 by the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Rural Development Fund (EARDF). Through the EARDF, about 100 billion euros have been allocated in the 2014-2020 programming period to finance a number of six development priorities, which can be used by 2023 by EU Member States under national rural development programs (RDP). At least four of the six priorities must be addressed by each RDP, set at national or regional level. The CAP reform aims to support more environmentally friendly agriculture under the motto "public money for public goods". (<https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/rural-development>).

Recognition of the contribution of organic farming to the production of public goods under the CAP is linked to the trend of the organic products market, reflected more in the increase in consumer demand for such organic products (by 7.4% in 2014), than in the increase of organically cultivated land at EU level (5.7% of the total EU agricultural area in 2014). In these circumstances, the CAP reform has created both the opportunity to stimulate the development of organic farming and the achievement of environmental and climate change objectives, as well as the possibility for European farmers to meet the growing demand for organic products, thus increasing their income and creating jobs (Stolze et al., 2016).

Thus, through the CAP 2014-2020, under Pillar 1, organic farming receives the greening component without the need to fulfill other obligations due to the contribution to environmental protection objectives. As regarding Pillar 2, organic farming is referred to in Regulation (EC) No 1234/2007. 1305/2013 with support for conversion and maintenance (Article 29), investments (Article 17) and quality schemes (Article 16) but also PPE-Agri (Title IV). The EARDF allocation for organic farming (Measure 11) in the period 2014-2020 is 6.3 billion euros out of a total of 99 billion euros for RDPs. The percentage of 6.4% for this measure of the total funds is almost equal to the percentage of 5.7% that represents the organically cultivated area of the total agricultural area at EU level. The figures show that there is no correspondence between the area of the organically grown national agricultural sector and the allocation from national rural development programs for organic farming. Of the 28 EU Member States, 11 countries, including Denmark, Greece or Germany, even Bulgaria and Cyprus, have allocated significant amounts to the development of organic farming in the RDP, relative to the organically cultivated areas in these countries.

In addition, 12 of the 28 countries, including Romania, decided to support, through the funds allocated to measure 11, a smaller agricultural area than the one that was organically cultivated or was in conversion in 2014. At the opposite pole, Germany, Greece, Italy and Poland have allocated funds for an area larger than that cultivated organically or in conversion in 2014 (Stolze et al., 2016).

It is noted that there is no EU-wide strategy for the development of organic farming with the support of the funds allocated through Measure 11. While some Member States attach particular importance to the development of organic farming, others manage to keep it at the same level, which may lead to the conclusion that at the end of the 2014-2020 programming period there will be no increase in organic farming at European level to be due to the use of European funds allocated through national rural development programs. An assessment of the

impact of EARDF investments in Measure 11 will be possible in 2023, when it will be possible to assess not only the extent to which organically grown agricultural area has increased at EU level, but also the way in which supply and demand problems have been resolved, as there is no adequate support for organic food production or innovation in this sector (Stolze et al., 2016).

Supporting organic agriculture in Romania through the National Rural Development Program (NRDP) in the period 2014-2020

For the 2014-2020 programming period, MADR provided within the NRDP, which covers the entire territory of Romania, for the measure dedicated to supporting the organic agriculture sector, an EARDF financial allocation of 200.686.161 euros, to which is added Romania's contribution (Fig. no. 2) (NRDP, p.367). It is a continuation of the efforts undertaken in the 2007-2013 programming period ensured by Measure 214 - agri-environment payments. Measure 11 proposed two sub-measures: Measure 11.1 support for the conversion to organic farming practices and methods, 11.2 support for the maintenance of organic farming practices and methods. (NRDP, pp. 457-460).

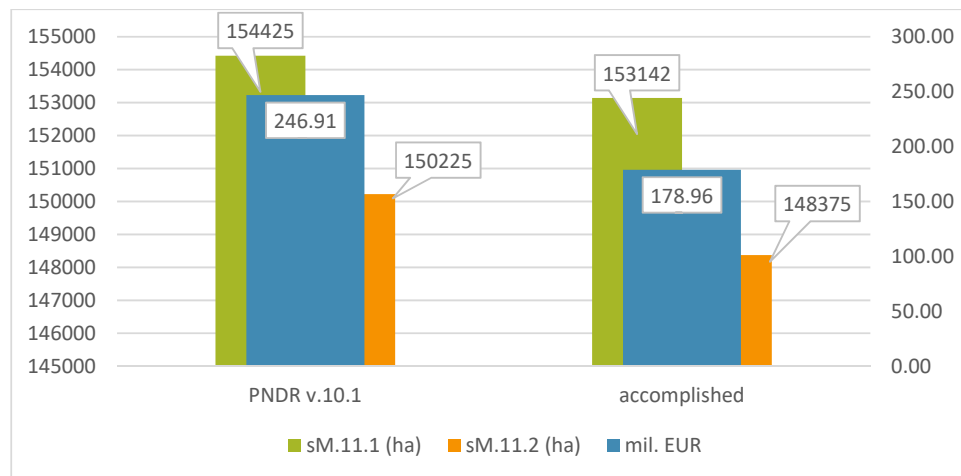


Fig. no. 2 The ratio between the amounts allocated and the amounts contracted at the end of 2019 for the two sub-measures of Measure 11 of PNDR 2014-2020

Source: data processed by the author based on information provided by the Ministry of Agriculture and Rural Development.

Sub-measure 11.1 - Support for the conversion to organic farming practices and methods provides compensatory payments with an intensity of 100% for the operations carried out by active farmers (users of agricultural land) for the conversion to organic farming. The sub-measure contains 6 support packages for the conversion to organic farming for: arable crops; vegetables, orchards, vineyards, medicinal and aromatic plants, permanent meadows. The support is granted as a fixed amount annually, per unit area (hectare) as a compensatory payment for income losses and additional costs incurred by beneficiaries who enter into voluntary commitments for a maximum period of two years (for annual crops) and a maximum of three years (for perennial crops).

At the same time, it is obligatory to observe the practices specific to organic farming on the agricultural areas subject to the commitment, throughout its duration and to maintain the certification of the areas subject to the commitment for conversion to organic farming methods for at least five years since the time of signing that undertaking. The compensatory payments under the packages of sub-measure 11.1 granted for the conversion period differ as

it follows: 293 euro / ha / year for agricultural crops on arable land; 500 euro / ha / year for vegetables; 620 euro / ha / year for orchards; 530 euro / ha / year for vineyards; 365 euro / ha / year for medicinal and aromatic plants; 124 euro / ha / year for mechanized works on permanent meadows; 266 euro / ha / year for manual works on permanent meadows. In the case of farms with agricultural areas larger than 50, 100 and 300 ha, the degressivity of the financial support will be applied. It is important to emphasize that payments for organic farming can be combined with other types of area payments: direct payments, payments granted for areas facing natural constraints or other specific constraints (PNDR, p.460-466).

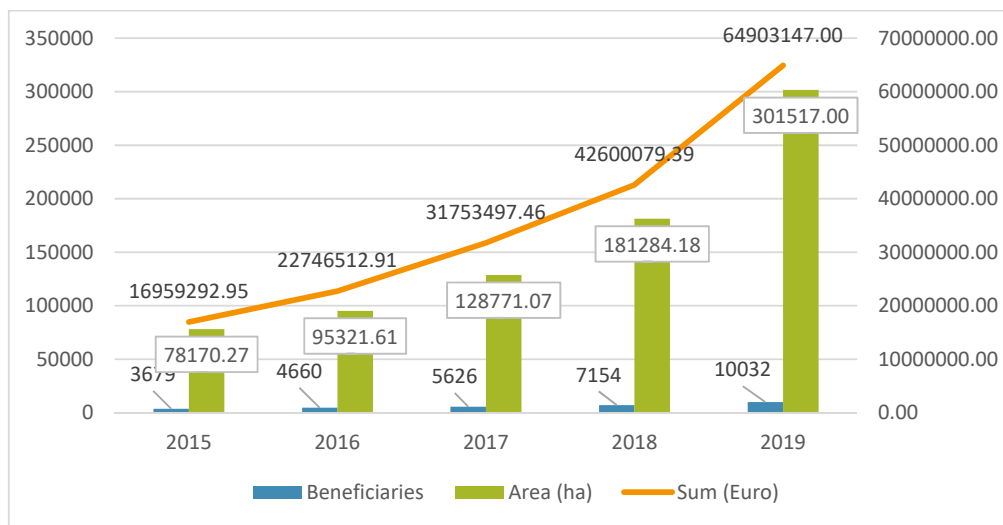


Fig. no. 3. The situation of farmers who benefited from the amounts allocated from EARDF, for areas converted to organic farming practices and methods or their maintenance for the period 2015-2019

Source: data processed by the author based on information provided by the Ministry of Agriculture and Rural Development.

Sub-measure 11.2 - Support for the maintenance of organic farming practices and methods provides compensatory payments with an intensity of 100% for operations carried out in order to maintain organic farming practices.

The sub-measure contains six support packages for organic farming certification of: arable crops; vegetables; orchards; vineyards; medicinal and aromatic plants; permanent meadows certified for organic farming; mechanized works and manual works on permanent meadows. Support is granted as in the case of Measure 11.1 and the conditions imposed on farmers are the same. Compensatory payments are calculated as standard costs per hectare of agricultural area for each of the six proposed packages and are granted for certification to organic farming in the amount of: 218 euro / ha / year for arable crops (including fodder plants).) 431 euro / ha / year for certified vegetables for organic farming; 442 euro / ha / year for orchards certified for organic farming; 479 euro / ha / year for certified vineyards for organic farming; 350 euro / ha / year for medicinal and aromatic plants certified for organic farming; 111 euro / ha / year for mechanized works and 253 euro / ha / year for manual works on permanent meadows.

The data presented in Figure no. 4 may lead to the conclusion that the number of certified operators in organic farming and total organically cultivated areas in Romania during 2015-2019 has increased (since 2016) due to the infusion of European funds. Thus, if out of the 12.000 certified operators in 2015, 30% received European funds, in 2019 the number of beneficiaries of support through Measure 11 is almost equal to that of nationally certified operators.

Also, in the period 2015-2019, the ecologically cultivated area in Romania increased by about 120.000 ha, an evolution that is also due to the financial support from European funds from about 78.000 ha (2015) to about 310.000 ha (2019) for the areas in conversion to organic farming practices and methods or for their maintenance. (NRDP, pp. 467-478)

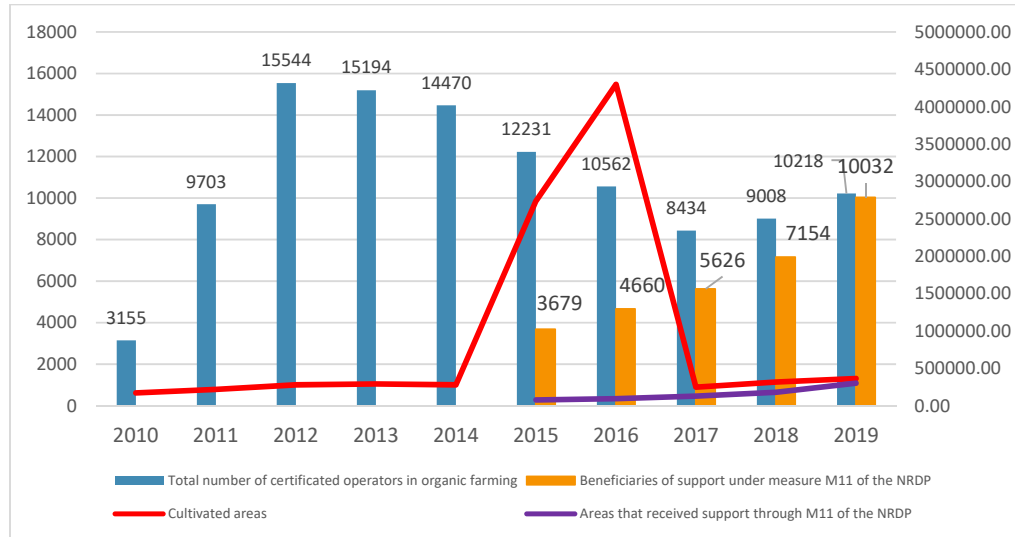


Fig. no. 4. The situation of certified organic farming operators, reported to the beneficiaries supported by Measure 11 of the NRDP and the situation of organically cultivated areas reported to areas that received support for conversion to or maintenance of organic farming practices and methods in 2015-2019

Source: data processed by the author based on information provided by the Ministry of Agriculture and Rural Development.

Conclusions

The analysis reveals the contribution of the CAP reform and the allocation of funds for the organic agriculture sector in Romania to its development. However, the development of the sector does not only depend on the amounts granted by NRDP but also on the support of this sector through other national or regional programs (support schemes) and through measures to promote organic products that increase consumer demand. The situation of organic farming varies from one country to another, from one region to another, depending on the specifics of agriculture, the level of economic development, and a solution that can be replicated and ensure the same success cannot be identified. It is important to identify the mix of policies and financial support that is most effective for a particular EU area or Member State. European financial support is proving indispensable, but its role must be adapted to the evolution of the organic farming sector. The need for indicators that measure the impact of supporting this sector on improving the environment and halting the effects of climate change is the new challenge of the 2021-2027 CAP.

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CRUISING INDUSTRY: SUSTAINABILITY PERFORMANCE AND SOCIAL RESPONSIBILITY

Carmen Florentina Vlăsceanu¹ and Gabriela Țigu²

¹⁾²⁾ The Bucharest University of Economic Studies, Romania

E-mail: carmen_vlasceanu@yahoo.com; E-mail: gabriela.tigu@ase.ro

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Abstract

The context of globalization favored the conditions enabling the tourism and hospitality industry to become the largest industry in the world accounting for the highest growth levels over the past consecutive years. This study was conducted with the aim of analyzing various aspects pertaining to the cruising industry's commitment towards sustainable development and their goal to minimize the environmental impact of tourism growth on the global touristic destinations.

The methodology is based on an extensive research of the existing literature as well as an introspective analysis of the cruising industry reports. The reports provide a glance at the environmental activity of one of the leading global cruise brands in alignment with the maritime environmental management standards within the cruising industry.

The study is also investigating factors linked to the environmental impact of tourism on the global scale in relation to the efforts invested towards achieving the goal of making tourism an efficient instrument that creates value by coexisting in harmony with the natural landscapes. From this perspective, the analysis indicates that the cruising industry has taken a leading role displaying corporate social responsibility through the discovery of innovative sustainable solutions and commitment to overcome advanced systems implementation challenges ensuring consistency across the brands within the industry and across geographical regions.

Keywords

Sustainable tourism, environmental protection, environmental impact, innovative sustainable solutions, corporate social responsibility, landscape conservation.

JEL Classification:

Q56

State of the industry - Sustainability and corporate social responsibility in hospitality industry

The increasing evolution of the tourism industry at the global level in the recent years fostered unprecedented economic growth. World travel had been transformed over the years with dramatic increases in the number of tourists and the seasonality challenges from the past had been reduced by expanding the services portfolio to various geographical destination areas allowing for thriving business year-round. With tourist traffic set to rise there are many positive effects in terms of product and service diversification, customer experience innovation, enhancement of operations, expansion of shore excursion programs, all designed to appeal to the desires of modern travelers.

Along with the positive effects it is well-known that there are also negative effects with undeniable impact on various aspects related to the environment, social and economic, culture and geo-politics (ECC, 2012 and ICCA, 2012). It is also the aim of this research to reflect the efforts of drawing attention to the dangers that may result from the development of the tourism industry and join the sustainable development cause highlighted by non-governmental organizations, local administrations and tourism and environmental specialists.

Sustainability as it is defined rests on three essential pillars: environmental, social and economic, each one of them can be associated with three dimensions of our existence: planet, people and profits. “The social responsibility of business encompasses the economic, legal, ethical and discretionary expectations that society has of organizations at a given point in time”(Carroll, 1979). It’s objective is to find the thin balance between supply and demand and it refers to the use and preservation of resources in such a way as to ensure a continuing existence of our species on this planet in the long future.

The rapid development of the hospitality industry brings along environmental protection and natural landscape conservation challenges forcing well-established brands and global corporations to display a good set of principles and practice corporate social responsibility along with their financial performance.

“As society’s stakeholders become more concerned with staff welfare, the impact on the environment and local communities, they will put pressure on the most visible corporations to address the issues” (Bonilla-Priego et al., 2014)

All around the world international conferences, forums and interactive panel discussions addresses the urgency of sustainable development situation, as the majority of players within the world’s biggest industry join their forces to tackle the severe issues of tourism growth and creatively find innovative solutions to ensure environmental sustainability.

Examination of the sustainability in cruising industry

The sustainability movement had its debut over 20 years ago when for the first time in Alaska regulations pertaining to wastewater discharge have been imposed to the visiting cruise ships (ADEC, 2002). Shortly, the Baltic region and the West Coast followed suit in what was at the time an altogether new daring approach. Ever since that time the industry has come a long way evolving in their objectives and practices towards a desirable zero emissions target. As the entire world is becoming increasingly aware of the imminent environmental changes that ought to occur, so do the port communities are becoming more concerned about the air emissions generated by cruise ships when in ports, converging with the cruise industry’s active engagement in developing technologies and fuels to reduce emissions both at sea and in ports. The success of this environmental tactic depends on the ambition and determination of the cruise operators with the implication of the official authorities from the local regions specific to the visited ports.

The industry’s bold initiative takes into account improvements intended to radically affect the water and air environment at sea as well as in ports, through efficient emissions restrictions.

As such, Norwegian authorities have taken the lead declaring that by latest 2026 the heritage fjords shall be emission free (Offshore Energy, 2019).

The regulations established at the IMO level and the cruise industry's mandatory compliance has been essential for the efficiency of the environmental practices and the overall improvement in sustainability of the terrestrial ecosystem. As such, various actions have been employed by the cruise industry from the inception of shore-power installations and exhaust gas cleaning equipment also known as scrubbers, marine fuels sulfur content restrictions or use of alternative fuels, such as LNG (OECD/ITF, 2016).

The latest Energy Efficiency Design Index issued for 2020 - 2025 provides requirements that all the newly built ships must be 20 to 30 percent energy efficient.

Following to this directive, a major deployment of funds have been invested by the global cruise operators working closely with research and development organizations and shipyards in order to create and design advanced technical systems resulting in more energy efficient powerplants, HVAC systems (IMO / EEDI, 2016) efficient wastewater treatment systems for a cleaner discharge into the sea, in addition to energy management plans and more efficient operations. Not too far sighted is the invention of new systems able to transform the garbage into energy which then could be used as fuel to power the over 180,000 tons mega cruise ships.

Environmental impacts and the effects of cruise overtourism

Without a doubt the fastest growing sector within the world's largest industry is the marine and coastal tourism which over the past two decades recorded exponential growth and global geographical expansion (Fig. No.1). Yet despite increased awareness of the economic and environmental significance of tourism, it is only in recent years, scientific researches have emerged (Hall, 2001). Negative impacts from tourism occur when the level of visitor use is greater than the environment's ability to cope with this use within acceptable limits of change. Uncontrolled conventional tourism poses potential threats to many natural areas around the world (Sunlu, 2003). Natural tourist destinations in particular require the consideration and care displayed by the tourists towards the landscape, flora, fauna and its biodiversity. Touristic city destinations rich in history and culture demand respect for its inhabitants and touristic attractions as well as preservation of archaeological sites, however a poor destination management will destabilise the equilibrium of the nature, overcrowding the cities and affecting the people who live there - referred to as overtourism (UNTWO, 2007).

In his research (Johnson, 2002) categorizes the impact of cruise tourism on the environment based on a life-cycle analysis referred to as LCA methodology. According to Johnson the *infrastructural impacts* refer to the alterations of the natural landscape for construction of cruise infrastructure and terminals; *operational impacts* are those affecting the air quality and the ocean ecosystem caused by exhausts emission; *waste impacts* caused by sewage, grey water, garbage, oils and hazardous chemicals which should be disposed in ports; *distribution impacts* are linked to the traveling logistics of the cruise passengers and overcrowding of destinations; *use impacts* refer to nature and volume of activities organized and their impact on the local communities and wild life.

While there are success stories of ecosystem conservation programs around the world, there are also recorded natural habitats and entire ecosystems depleted by the environmental mismanagement of the industry.

The following statistic reflects the number of cruise passengers carried worldwide from 2007 to 2019. The highest numbers were recorded in 2019, 14.13 million passengers from North America and 6.35 passengers from Europe and 4.84 from the rest of the world were carried on cruise ships to various touristic ports.

Records indicate that the cruising industry witnessed an exponential development over the past two decades and it continues to grow on a global scale.

UN's Sustainable Development Goals (SDGs) for 2030 is set to eradicate poverty in the world by accelerating progress and address climate change eliminating the environmental degradation. The majority of world cruise operators within the industry responded adhering to the UN's SDGs goals acknowledging the impacts of mass cruise tourism. They set out to take actionable measures to address the issues with social responsibility towards raising awareness and protect natural environments by implementing a series of sustainability policies and ensure consistent corporate reporting that demonstrate the actions taken.

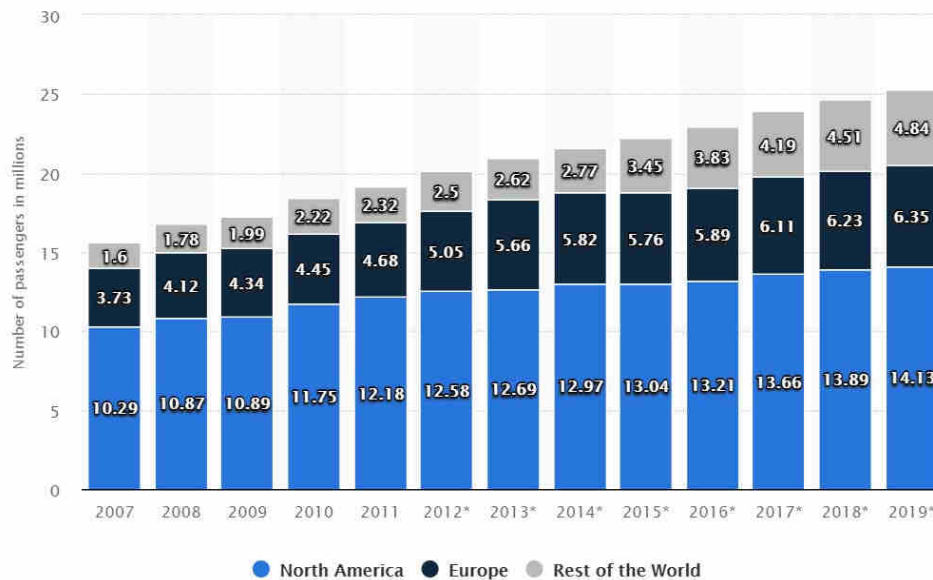


Fig. no. 1 Number of cruise passengers carried worldwide from 2007 to 2019 (in millions)

Source: Statista – retrieved from: <https://www.statista.com/statistics/270605/cruise-passengers-worldwide/>

This exploratory review was conducted to reflect the sustainability approach employed by some of the operators and exemplify some of best practices publicly reported by the selected leading cruise companies on their corporate websites and yearly sustainability reports. Taking an introspective glance on their sustainability strategies and how that translates into their operations with direct environmental, social and economic impact is also the focus of this empirical study. The selected quantitative data serves the explanatory purpose, in terms of some of the actionable measures adopted within the industrys' sustainability approach and this paper has its limitations and does not intend to focus on a comparative analysis.

As the cruise industry continues to expand, gradually its environmental footprint becomes noticeable by various forms of pollution specific to the industry: air emissions, oils, chemicals and other pollutants, balast, grey and black water, sewage releases, solid waste, noise.

(Table no.1) presents data relevant to the fluctuating waste water volume over three referenced years 2016 through 2018. This CCL issued shipboard report presents information reflecting the magnitude of emissions and waste generated on a yearly basis by the entire fleet of vessels allowing a relevant comparisson of the notably decreasing values of waste inspite of the increasing number of ships.

Table no. 1 CCL waste water discharge fleetwide statistics in 2016-2018

	Units	2016	2017	2018
Total Ships	Number	102	103	104
Bilge Water Discharged to Sea ⁷	Metric Tons	205,846	178,152	165,133
Bilge Water Sea Discharge Rate ⁷	Liters/NM	21.9	18.5	17.1
Gray Water Discharged to Sea	Metric Tons	17,862,704	17,048,797	17,742,316
Gray Water Sea Discharge Rate	Liters/Person-Day	155.9	144.6	146.6
Black Water Discharged to Sea	Metric Tons	7,915,258	7,775,545	7,873,151
Black Water Sea Discharge Rate	Liters/Person-Day	69.1	65.9	65.0

Source: Carnival Cruise Lines - <https://www.carnivalcorporation.com/transparency-and-reporting/sustainability-reports>

Another report issued by Carnival Cruise Lines lists quantitative data pertaining to emissions associated with gases such as nitrogen oxides (NO_x), sulphur oxides (SO_x), as well as ozone depleting substances (ODS) emissions 1,3 such as carbon dioxide (CO₂) specific to the exhausts of marine diesel engines and a decreasing trend was noted in three consecutive years 2016 through 2018 (Vlasceanu et al, 2020).

The World Tourism Organisation (WTO, 2019) forecasted that by 2030 the number of tourists will reach 1.4 billion having a major impact on the global environment. The affordability of flight fares and the increase of flights volume operated by low-cost carriers enabled a continuous flow of tourists throughout the world, in addition to the impressive number of newly built mega-size vessels that are introduced every year which exerts enormous environmental pressure over the oceans and the destinations of the world.

„It can lead to impacts such as soil erosion, increased pollution, discharges into the sea, natural habitat loss, increased pressure on endangered species and heightened vulnerability to forest fires. It often puts a strain on water resources, and it can force local populations to compete for the use of critical resources” (Hilaire, A., 2007).

Table no. 2 CCL waste disposal statistics registered fleetwide in 2016-2018

	Units	2016	2017	2018
Total Ships	Number	102	103	104
Total Waste	Metric Tonnes	354,156	357,767	378,142
Hazardous Waste ⁸	Metric Tonnes	127,105	137,957	144,236
Non-Hazardous Waste	Metric Tonnes	227,051	219,810	233,906
Waste Rate (Excluding Recycling)	Kilograms/Person-Day	2.3	2.2	2.2
Waste Recycled	Percent	26.5	28.0	30.1

Source: Carnival Cruise Lines - <https://www.carnivalcorporation.com/transparency-and-reporting/sustainability-reports>

The values listed above reflect a slightly increasing trend between 2016 throughout 2018 associated mainly with the higher number of cruise ships.

Although it may seem that zero emissions target is far off, the race towards finding alternative sustainable energy sources fosters the appropriate conditions for new discoveries and emergence of disruptive green technologies to drive fuel efficiency while preserving the global ecosystem. In 2019 Carnival Corporation's german brand AIDA Cruises made history with it's newly built 183,900-ton AIDA Nova being the first world cruise ship LNG powered (liquified natural gas), while both at sea and in port.

Table no. 3 CCL ship fuel statistics registered fleetwide in 2016-2018

Total Ships	Units	2016	2017	2018
Emissions Type	Number	102	103	104
High Sulfur Fuel Oil (HSFO)	Percent	75.8	74.0	73.3
Low Sulfur Fuel Oil (LSFO)	Percent	3.0	5.4	6.1
Marine Diesel Oil/Marine Gas Oil (MDO/MGO)	Percent	21.2	20.5	20.6
Liquefied Natural Gas (LNG)	Percent	0.01	0.03	0.01

Source: Carnival Cruise Lines - <https://www.carnivalcorporation.com/transparency-and-reporting/sustainability-reports>

The above ship fuel report reflects a considerable decreasing trend validating CCL's commitment and compliance with 2020 IMO regulations. The IMO's future objective is by 2050 all ships must comply with the 50% reduction in CO₂ emissions, driving the industry towards science and research to discover alternative energy and storage technologies besides LNG such as advancing fuel cell, hydrogen, methanol and ammonia-based energy as well as solar and even wind power.

One of the most committed companies towards sustainable tourism is Carnival Corporation with 11 LNG-fueled ships on order, having the largest orderbook of green ships in the cruise industry (CCL, 2018).

The industry modified the advanced emission purification scrubber systems as to remove the sulphur component from the fuel. The newly introduced technical measures, although in incipient phase require major investments to be made by the cruise operators, ultimately drives benefits for the environment as well as increasing the fuel savings cost.

Nevertheless, in spite of the advanced technical developments and the high costs associated with it, cruise operators continue their pursuit towards finding ways to increase the level of conservation and reduce the environmental footprint by lowering the energy consumption.

Conclusions

Findings of this research paper conclude that in addition to the disclosure of management and good practices, cruise companies publish valuable data and internal performance indicators specific to the industry's environmental regulations. During the research process the volumetric data was collected accessing publicly published reports and their analysis reflected the compelling evidence of the difficulty of achieving sustainability efficiency aboard the mega-cruise ships. Supporting this statement, some of the reports reflected a descending trend in waste and pollutants, while other data and numerical indicators showed a slight increase, correlated with the higher number of cruise ships comparing to the previously referenced years.

Unlike the wide spread of hotel brands, global cruise companies are focused on achieving a zero impact on climate by the implementation of environmental management standards, known as ISO 14001, which can ensure the carbon neutral independent functionality while at sea, eliminating CO₂ emissions on all ships.

The cruise companies are committed to employ new technologies in order to reduce the CO₂, and other emissions with the daring target of achieving zero emissions. As such, it is documented that throughout the leading cruise brands major investments have been deployed working along with research institutes and shipyards to achieve the goal of sustainable tourism and ultimately help preserve the eco-system, enhance the marine biodiversity and equally support communities that solely rely on the sea (Carnival Corporation and PLC, 2018).

As cruise tourism continues to grow and develop it's global expansion, achieving sustainable tourism becomes increasingly concerning and therefore addressing and monitoring the socio-

economic, cultural and environmental implications, becomes essentially important for all the stakeholders involved.

Some authors consider the industry's commitment as being „a compromise that essentially requires very little change from dominant economic driven practices but effectively works to defuse opposition, increase legitimacy and allow business as usual” (Roper, 2012). Taking into consideration the dramatic increase of accommodation capacity resulted from newly built cruise vessels one might question the true meaning of sustainable development while struggling to improve environmental sustainability levels and relax the pressure upon natural resources. As with most industries, economies of scale mean that larger vessels provide greater profits for the company hence there is an increasing trend toward gigantism (Soriani et al., 2009).

While the cruise industry's commitment in the development of new environmental approach might applaudable, meanwhile the global natural landscape is irreversibly affected by environmental degradation, therefore considerations need to be continually analysed as to implement more stringent guidelines on oceans and air pollution and encourage innovative and efficient solutions to alleviate this problems.

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COMPETITIVENESS IN GLOBAL HOSPITALITY AND CRUISING INDUSTRY

Carmen Florentina Vlăsceanu¹ and Gabriela Țigu²

¹⁾²⁾ *The Bucharest University of Economic Studies, Romania*

E-mail: carmen_vlasceanu@yahoo.com; E-mail: gabriela.tigu@ase.ro

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Abstract

The purpose of this research is to examine the competitiveness within the hospitality industry, particularly as it relates to the market race within the touristic sector, as well as the competing aspect and the destinations attractiveness. Our study reflects that rising competition within the hospitality industry besides a series of factors, it is also linked to the average pricing decrease responsible for attracting a broad customer base. Today, business brands have to poses knowledge and abilities that are relevant to the market, helping them identify future opportunities. Analytical capabilities of the overall global business environment as well as customer metadata provides hospitality brands with valuable insights pertaining to the expectations, motivations and intentions of their clients – vital to the evolution of the business on which the organizations' future will depend.

The methodology focuses on reviewing the dimensions of the competitiveness, analyzing various aspects relevant to the key factors responsible for the dominance of the major hospitality players present on the global tourism market scene. The relationship between aviation industry, hotels, global cruise operators, destinations and market clustering represent an important catalyst responsible for facilitating decisions on diversification and innovation, ultimately allowing a better market positioning and expansion through connections within the industry.

The findings of this research conclude that the world's interconnectedness favored by the technology developments affected the hospitality industry competitiveness by shifting the influence and power from the institutions to the individuals and influencing the evolution of the markets and increasing the competition levels at global dimensions.

Keywords

Competitiveness, hospitality industry, innovative business strategies, clustering, blockchain, learning organizations, user experience (UX), user intelligence (UI).

JEL Classification:

L1

Competitiveness within the global hospitality context

The hospitality industry has been the fastest growing and by far the most profitable economic sector, as leisure and business tourism have been commonly embraced by various market segments. Defining hospitality competitiveness is rather difficult and unlike other economic sectors as it integrates many other industries, such as, logistics, air, ground and maritime transport, accommodation, entertainment, etc.

The increasing competitiveness within the hospitality industry had made the subject of many headlines drawing attention on the brands and the primary beneficiaries of the exponential increase of this industry. On academic grounds the focus of attention has been drawn towards research topics investigating market segmentation, revenue management, marketing strategy, demand forecasting, destination management, economic and environmental issues, itinerary design as in the case of cruising sector in the context of global tourism industry.

Millions of tourists across the globe have been enjoying the services of the airlines industry, hotels, motels, ground transportation, cruise ships, visiting the most remote places on earth. Last year's (2019) tourism industry's contribution to GDP was approximately 2.9 trillion U.S. dollars, out of which a total of 580.7 billion U.S. dollars came from the United States' tourism industry. In 2018 the commercial airlines' revenue alone contributed with approximately 812 billion U.S. dollars from international tourist arrivals (Statista, 2020). As the number of tourists grew year on year, created the need of more accommodation establishments which triggered the inevitable competition among the hospitality brands. As a consequence, the role of hospitality management had become crucial, being confronted with tremendous challenges, to create innovative business strategies, optimize hospitality services and internal processes aimed at improving the effectiveness of operations and gain market share. Academic research proposed a series of measuring methods addressing competitiveness from the comparison perspective of hotels within the same category and similar market conditions, however the service sector lacks an index guide designed to compare brands at different levels in hospitality and various locations. Development of a complex index and a competitiveness measuring model has to consider many variables that allow for an equivalent and objective comparison among the hospitality brands, taking into consideration the differentiating local norms and culture as well as the surrounding economic conditions of the region. Hospitality brands compete on all levels taking into account all the dimensions of service quality SERVQUAL, tangibles: food quality, reasonable price, entertainment quality, as well as intangibles: reliability, responsiveness, assurance, empathy (Parasuraman et al., 1988).

Problem Statement: Determining factors linked to hospitality competitiveness: human talent, customer experience, technology innovations, learning organizations

The concept of competitiveness such as its application is characterized by complexity in the context of global tourism, being defined by a series of conglomerated factors that ought to be investigated individually and subsequently analyzed together as a giant business puzzle.

Determinants that project the organizations' strengths and weaknesses related to the internal stakeholders, such as: strategies, capital, physical characteristics of fixed assets, human capital, education level and training, process management, productivity, operational costs, pricing, marketing, technology, brand image, service quality have become the focus of research, being identified as key factors that contribute to the hospitality organizations' competitiveness. Competitive strategies in the international hospitality industry relay unquestionably on close examination of the external conditions of the local and international market, customer demand, customer satisfaction, as accurately as possible with the assistance of technology innovation and systematic metadata reports analysis.

For this reason, measuring each of the competitiveness indicators becomes essential in the decisional process affecting performance and profitability of the hospitality business. (Juhasz-Dora, 2015) emphasizes the importance of defining „a complex measurement method to

indicate the level of business efficiency, profitability and guest satisfaction at the same time which allows the comparison of hotels of the same category”.

These determinants form a complex framework providing guidance to executive management to objectively evaluate the operational activities and better rationalize their strategic approach and tactical alliances. Process design specialists create touristic products and bundle services that provide meaningful and relevant experiences to customers, referred to as *user experience* (UX) a complex process combining aspects of branding, design, usability and function with acquisition and product integration. At the forefront of the design engineering process is UI *user interface* expressed through the content, images, sliders, text entry fields, and the simplicity of the acquisition process. Performance indicators reflecting either the occupancy rate, or gross operating profit per available room GOPPAR, total revenue per available room also known as Trev PAR, average daily rate or ADR, revenue per occupied room or RevPAR, revenue per available room RevPAR, earnings before interest, taxes, depreciation and amortization referred to as EBITDA, Average revenue per account, or ARPA - all these revenue management kpi's have registered dramatic increase in values over the past decade. (Chen et al, 2016) developed a path model of the determinants of cruising industry demand, stating that different cruisers motives have a significant positive or negative effect on specific cruise preferences and intentions, highlighting the significant relationships between cruise preferences and intentions. The authors employed the analysis of variance ANOVA based on a collection of statistics to compare and identify the differences of cruise motivations and cruise preferences specific to the Asian market further establishing determinants, differences and similarities of cruise competitiveness in different regional markets. Along with the attractiveness of the region as primary inputs, competitiveness is also influenced by the local institutional and networks capacities in addition to economic and business-related contributing factors. Fair consideration should be attributed to “critically important variables, such as location, overall costs, and safety, which are beyond the control of the tourism sector but which play a major role in destination competitiveness” (Enright and Newton, 2004). Clustering blockchain data allows gathering the information related to behavioral patterns into categories, and the analysis of perceived value had become a form of competitive advantage, provided that that companies have sharp abilities to understand their customers and adopt a high degree of product and service customization. To achieve this, a multidimensional measuring tool had been developed based on primary data and complex algorithms that allow a measurement of the service perceived value (SERV-PERVAL) and from its inception it had been intended to serve the purpose of evaluating customer service satisfaction in order to elaborate predictions and forecast re-purchase (Petrick, 2002).

In his study (Zhao, 2014) underlined that 4F marketing strategy was employed to change the traditional cruise consumption idea and make the corresponding analysis and countermeasures to promote the cruise. There are a number of methods that the academic world researched during the years proposing various applied models for hotel competitiveness measurement. (Juhasz-Dora, 2015) proposed a methodology and a business implementation of the index, testing the grey relational analysis, GRA on the basis of the competitiveness pyramid, situating the guest and the performance output at the top of the pyramid, followed by leadership performance in the middle position and at the base of the triangle left and right employee with its internal capabilities is delimited along with the ownership and management and the environmental output. Performance measurement methods such as Advanced Data Envelopment Analysis, known as DEA, Structural Equations Modeling, Factor Analysis known as CFA, Fuzzy number method based on a technique using multi-criteria decision analysis for Order of Preference by Similarity to Ideal Solution known as TOPSIS ranking, Performance Measurement Framework proposed by Phillips, P. in 1999 or Porter's Diamond Model also known as the theory of national competitive advantage of industries, addressing the demand and factor conditions, strategy, structure and rivalry along with related and

supported services – they all investigate the process of evaluation of the overall performance of the organization, proposing tools and algorithms to calculate the efficiency score and effectiveness of each department in relation with the comparable units from best practices.

Aims of the research: Examination of the competitiveness in cruising industry

The tourism industry has become an increasingly important factor in terms of economic development and the cruising sector by far has witnessed the higher developing trend providing new opportunities and upgrading the local environment and the visited communities. Ocean and coastal tourism received much attention in the last two decades being widely regarded as one of the fastest growing sectors of contemporary tourism with the biggest contributions to the global GDP. However, “despite increased awareness of the economic and environmental significance of marine and coastal tourism it is only in recent years that a significant volume of research has emerged, particularly focusing on the environmental” and socio-cultural impacts of tourism (Hall, 2001).

According to Statista, 2020 issued reports on a global scale in 2019 travel and tourism industry had an approximate direct contribution of 2.9 trillion U.S. dollars to the GDP, while the United States’ alone generated a total of 580.7 billion U.S. dollars, the highest amount contributed to the global GDP. United Nations World Tourism Organization recognizes that “robust growth in international tourism is continuing, 2018 witnessed the ninth consecutive year of growth in the sector, despite occasional shocks that have only served to demonstrate its stability and resilience” (UNWTO, 2019). Over the last years the concentration of the cruising industry gradually increased towards the Asian markets as every year additional ships have been deploying their voyages from Chinese ports of embarkation.

Since 2012 China maintained its leading position in the global tourism market with outbound tourists spending almost 277 billion U.S. dollars in 2018, around one fifth of the world’s total spending on tourism (McCarthy, 2019). In the recent years the emergence of Chinese middle class correlated with the facilitation of travel restrictions and simplified international transit procedures by the state authorities in addition to the increased volume of commercial flights, resulted in the development of a large-scale market eager to travel and experience the worlds attractions. All these aspects helped create the perfect conditions for a booming market of vast proportions, turning China into the largest contributor to the global outbound tourism market and the main source of financial currency across the world. Research reflected an increasing spending pattern of the Chinese tourists in high end products and luxury goods, especially good quality and expensive foreign brands. “In 2017 Chinese travelers turned more towards enjoying niche sectors like whisky tasting, aurora chasing, outdoor activities and other high-quality and less mass-oriented products and experiences” (McCarthy, 2019). Shanghai Wu Song Kou Lu International Cruise Terminal, world renowned and well-regarded key node city for national strategic deployments had seen a large development scale state of the art cruise ship terminal. Studies on destination, hotels and cruising industry had been advancing theories trying to forecast future directions and trends in tourism competitiveness research. Literature review revealed concepts, models and operational definitions that were used to analyze the performance of cruise tourism and aspects linked to competitiveness in this sector. (Brida and Zappata-Aguirre, 2008) considered that the decline of the passenger ship in competition with air travel in the 1960’s was caused by the modern cruising. Due to the magnitude and the variation within the cruising industry, the regional clustering of the destinations on one side and the lack of a universal index on the other side, accurately measuring aspects related to the competitiveness within industry brands becomes a daunting task. Relevant conceptual framework analyzing quantitative and qualitative factors integrated within the tourism value chain help explain competitiveness within the cruising industry in various geographical regions facilitating meaningful evaluation followed by significant operational decisions. Although the effect of rising competition in the cruising and hospitality industry leads to

boosting sales, it does not always translate in increased revenues and a higher profit margin as often the competitive industry structure implies dramatic price drops and alongside push and pull strategies, service diversification and other strategies work together to enhance and stimulate external tourism demand. The competitiveness degree of a hospitality organization whether a hotel, cruise line or a destination is essentially illustrated by the quality of services provided in conjunction with the integrated infrastructure and related services along the tourism value chain, every single one of them having a significant contribution to the destinations' long-term sustainable competitiveness. The below survey conducted by Statista reflects the degree of interest in hotel/cruise hospitality services based on the customers preferences. The figures are concluding to the fact that 80 percent of respondents ranked the internet access as being by far the most important, followed by the other features and amenities.

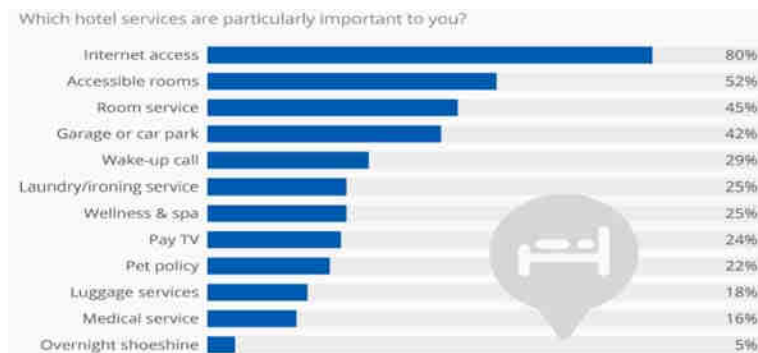


Fig. no. 1 Tourists' importance ranking of hospitality services

Source: Retrieved from: <https://www.statista.com/chart/9620/hotels-just-give-me-wi-fi/>

The millennial generation seems to be motivated by the desire to travel to various world destinations and meet new people; they have working and learning aspirations and often chose to have an attractive lifestyle comparing to other generations who were more concerned and prone towards financial investment and savings.

1. North America / 14,240,000
2. Western Europe / 6,731,000
3. Asia / 4,240,000
4. Australasia/New Zealand/Pacific / 1,460,000
5. South America / 883,000
6. Scandinavia/Iceland / 225,000
7. Eastern Europe / 213,000
8. Africa / 154,000
9. Middle East/Arabia / 111,000
10. Caribbean / 56,000
11. Central America / 47,000



Fig. no. 2 The origins of cruise passengers in 2018

Source: CLIA One Resource – retrieved from: <https://cruising.org/-/media/research-updates/research/state-of-the-cruise-industry.pdf>

The above infographic illustrates that most cruise passengers originate from the United States, justifying the geographical allocation of majority of cruise capacity to the Caribbean ports. The Mediterranean appears to be the second most popular destination for tourists, followed by the non-med European and South Pacific destinations in third place and fourth place.

A number of published empirical studies aimed at investigating existing knowledge of destination and hotel competitiveness making use of the availability of the meta-data and the advanced technology conferring an important advantage to the marketing services within the cruise corporations. (Kuwornu et al, 2013) emphasized the importance of the “complex task of generating compelling reports that allow for accurate interpretation of results with direct implications on the future marketing strategies and the overall decision-making process.” Seeking to attract new customers and convince the existing ones to re-purchase their customized and bundled services, cruise lines analyzes their travelers profile, their intrinsic motivation and behavioral aspects that differentiate the new cruisers from the repeaters (Kwortnik et al, 2018). Depending on the market segment and the nature of their services cruise companies differentiate in either river, canal and lake cruises, special interest, extended ferry mini-cruises, short ocean cruises, long-distance ocean cruises (Bull, 1996; Hall, 2004). (Cudahy, 2001) classifies cruise operators in upscale companies, mass-market cruise companies, niche market cruises and bargain basement cruise companies, while CLIA categorizes cruise brands into: budget, contemporary, premium and luxury.

Table no. 1 Cruise lines revenue comparison report 2015-2019 (in Millions of \$)

Carnival Annual Revenue		Royal Caribbean Cruises Annual Revenue	
Year	(Millions of \$)	Year	(Millions of \$)
2019	20,825	2019	10,951
2018	18,881	2018	9,494
2017	17,510	2017	8,778
2016	16,389	2016	8,496
2015	15,714	2015	8,299

Source: Macrotrends, 2020- Retrieved from:

<https://www.macrotrends.net/stocks/charts/CCL/carnival/revenue>

(Table no. 1) presents a comparison report between two similar competing cruise lines namely CCL, Carnival Cruise Lines and RCL, Royal Caribbean Cruises illustrating the scale of the annual revenue recorded during five referenced years, respectively 2015 through 2019. (Macrotrends, 2020) defined revenue as the money a company receives from its customers in exchange for the sales of goods or services and represents the difference between the income and expenses. Carnival Corporation & plc is the largest cruise company in the world, with a portfolio of 10 cruise brands with cruises in North America, Europe, Australia and Asia. (Schaefer, C., 1998; Carnival, 2008). To enhance a cruise line’s competitive advantages many strategic options are taken into consideration, such as the growth concept pursued to generate optimal revenues, which customers in terms of various customer segments that the cruise line will cater to, the type of services rendered on board, etc.(Gross, S., Luek, M., 2012). Carnival Corporation & plc represents the perfect example of a large number of cruise companies competing under the same ownership umbrella, although they are all sister companies sharing the same goals.

Conclusions, Forecasts & trends in sustainable business and consumption

Global cruise travel is continuing to grow at a steady pace around the world. The traditional North-American and Mediterranean cruise markets are being overtaken by the unexplored destinations that have embraced innovation at every level of their development. Over the last five years the focus of cruise lines has shifted towards the fast-developing South-Asian market, with its’ attracting travel destinations that feature more accessible and eco-friendly transportation methods, essential to drawing a diverse range of people choosing a modern and comfortable traveling style. There is a visible ascending trend in tackling head on the environmental, social and economic impacts of the cruising operations as to ensure business

continuity goals in this intensive competing race. The leading cruise companies' adherence to the UN 2030 Sustainable Development Goals highlights their commitment towards environmental sustainability specifically designed and incorporated into the business strategy as to confer competitive advantage and effectively communicate the brand values.

As cruise companies have increasingly embraced the sustainability doctrine, they have also been very selective with all the partners along the cruise logistic chain based on the shared commitment and compliance, reflected in sound sustainability strategies and practices along the entire value chain.

The factor that will dramatically impact the global tourism industry in 2020 and possibly for the following years, is the current coronavirus pandemic, known as (COVID-19). According to the World Travel and Tourism Council this pandemic could result in 50 million jobs cuts in travel and tourism industry worldwide, a global revenue drop by approximate 17 percent, with the Asian continent being the most affected. The world is now witnessing the highest employment loss in the industry caused by the implementation of severe travel restrictions in the attempt to curb the spread of the disease bringing the global tourism to a drastic halt. Although the long-term economic impact remains unknown and impossible to assess, the immediate effects are brutally experienced as shock waves in all the world's industries: international trade, travel and tourism, restaurants, retail, finance & insurance, real estate, construction, agriculture, manufacturing, mining, oil & gas, caused by the state of emergency declared in countries around the world and the standstill of everyday life. The level of success of the cruise companies depends on their ability to respond to the critical circumstances determined by the latest unfortunate turn of events while tackling critical factors tied to the financial fluidity and efficiently managing capital, human talent and inventory assets. In lieu of recent global events, adaptability becomes increasingly important in managing risk and reputation. The world's cruising companies have reconsidered their current approach towards sustainable business in times of global pandemic crisis, re-shuffling strategies whether they might downsize or retain position within the competitive marketplace.

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THE FOOD SUPPLEMENTS MARKET IS EVOLVING: WHAT ARE THE ISSUES IN ROMANIA?

Magdalena Bobe¹, Roxana Procopie² and Maria Alexandra Toma³

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

E-mail: magdalena.bobe@com.ase.ro; E-mail: roxana.procopie@com.ase.ro;

E-mail: toma.maria.a@gmail.com

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Abstract

Scientific studies link the consumption of food supplements with health aspects, physical activities, and affective state, but also with the aging process, too. For these reasons, their consumption accelerated more and more over the years and, their specific market is in need of well-established regulations involving: the production process (the good manufacturing practices); market access and placing (the notification as a pre-required); the assurance of quality (accountability by manufactures); the statement of safety (specific labelling) and marketing (the adequate information for consumers).

The present paper aims to identify and analyse the challenges that the food supplements market faces, having as a case study Romania, in the context of an increasing criticism of the consumers' organizations. On the other hand, food supplements' providers highlight the need of enlarging the consumers' awareness regarding this topic.

The EU legal framework imposes a harmonization requirement of the national legislation on this subject, but this action is difficult and involves long-term processes. Also, the number of cases of non-compliance with the legislation is increasing, which raises question marks on consumer's safety.

In this context, what are the main issues for that characterize the food supplements market in Romania and is there a trend in the evolutionary process of the food supplements' regulation?

Keywords

food supplements, harmonization of regulation, Romanian food supplements market, consumer's safety

JEL Classification

I12, L66, P46

Introduction

Human nutrition history reveals that diets have been closely linked to health protection. Balanced eating patterns are based on the consumption of foods that provide a significant intake of valuable nutrients. Therefore, a balanced diet can provide, under normal circumstances, all the necessary nutrients for a normal body functioning and can ensure a healthy lifestyle, but this ideal balance is not accessible for all social categories.

The report of Food Supplements Europe, an international non-profit organization, states there is scientific evidence proving that the use of food supplements does not only prevent nutrient deficiencies but can also lead to significant savings in health expenditures through a reduced risk of chronic diseases occurrence. (Food Supplements Europe, 2019).

Taking into consideration the general theoretical, scientific, legislative and operational framework regarding the issue of food supplements, the paper studies the premises that have contributed to the increase of food supplements consumption in Romania, for achieving good individual and public health.

In the European Union, developing a unitary legislation in the field of food supplements became a necessity that was determined by the rapid development of imports, production and commercialization of these products.

Thus, the compliance of food supplements with market regulatory requirements is an essential condition for consumer safety, under the rule of the regulatory challenges.

Premises for increasing the consumption of food supplements - A literature review

Many of the scientific and regulatory challenges that exist in research on the safety, quality and efficacy of dietary supplements are common to all countries as the marketplace for them becomes increasingly global (Dwyer, Coates and Smith, 2018).

Consumers choose nutritional supplements according to the body's needs or individual desires; therefore, supplement manufacturers have followed the consumers' requirements by producing various assortments, customized as much as possible for each category of consumers. Dietary supplements use is now a form of food behaviour, and consumers, manufacturers, and regulatory officers have to consider and evaluate their safety, efficacy, and quality (Féart, 2020). In this sense, ensuring food security within the European Union represents a cross-border issue, the single market requiring the development of the most important food quality and safety standards, at European level (Dinu, 2018).

In terms of composition, two main types of food supplements can be distinguished, according to the EU legislation: supplements containing vitamins and/or minerals and supplements containing other substances with a nutritional or physiological effect (amino acids, enzymes, essential fatty acids, pre and probiotics, botanical and herbal extracts, other active substances: Q10 coenzyme, lycopene, inositol) (MAPDR, 2005a; MAPDR 2005b; MSP, 2007).

Food supplements are designed for oral consumption (administration) by healthy people who require a higher exogenous intake due to specific nutritional requirements related to the physiological condition, such as pregnancy, lactation, age period, intense physical activities – the specific cases of athletes, physical effort-based professions etc.

Depending on the age of the consumers, food supplements aim to satisfy the necessities of *infants, children, adolescents, adults and elders*. The products required by infants consist mainly of powder milk formulas, necessary for the growth and development of babies (Ardeleanu, 2013). Other supplements administered to infants are vitamin D, iron, calcium and magnesium.

Children are administered, by doctor recommendation or parent initiative, nutritional supplements in the form of vitamins, multivitamins, calcium, fish oil or other supplements to increase immunity and probiotics.

Food supplements that targeted adolescents are those that improve memory, increase immunity and increasing concentration capacity. On the other hand, adults use nutritional

supplements for multiple purposes, depending on body needs or individual desires. The most popular are supplements that help to detoxify the body, that help to control body weight, that maintain a metabolic balance and are digestive adjuvants. Other supplements consumed by adults in particular are the ones used to control cholesterol levels and stress or energizers.

Elders are recommended especially cardiovascular nutritional supplements, which help controlling blood pressure and cholesterol, but also bone and joint health.

A separate category for which nutritional supplements are produced with a special destination is represented by athletes. They consist a reliable and regular demand for supplements, the overall aim being to increase at a maximum point the effects of exercise (Mănescu, 2010).

Summarizing, the consumption of food supplements is customized, based on its frequency and depending on personal needs. So, consumers can use nutritional supplements regularly, occasionally, regularly during competition periods (for athletes) or rarely.

The Romanian consumer of nutritional supplements can be any person, regardless of age, passing throughout periods of intense activity or wanting to prevent certain deficiencies of nutrients. The Romanian consumer can also expect to strengthen his immune system or aims to eliminate body toxins. Nevertheless, convalescence periods or the reducing of aging effects are on the reason list for which Romanian consumers take supplements

Regarding the timeframes for food supplements consumption, they differ according to the consumer group characteristics, but also from an individual to another. For example, in the cold season, the demand for vitamin C supplements is higher than usual, the supplements being consumed by all age groups and being purchased often on consumer's own initiative.

Romanian producers have diversified the range of food supplements in order to:

- cover the specific needs of children, young people, adults and elders,
- sustain the intensity of physical effort for the adult population during the working hours in various daily activities, cultural and sports activities and also recreation activities,
- offset the trend of reduced physical effort in terms of increasing neuropsychiatric demands, as a modern life condition,
- satisfy the nutritional needs for women in pregnancy period,
- prevent the occurrence of diseases caused by food imbalances.

The offer of food supplements on the Romanian market is much higher now compared to previous years, recording a boom, as of the consumer demand and also because of the high interest that various companies have for a sector with great development potential.

Analysis of the compliance of food supplements with market regulation requirements

Romania has transposed in its national legislation the specific European regulations. Thus, at a national level, Order no. 1069/2007 *for the approval of the Norms on food supplements* creates the legal framework necessary for the application of the European Commission Directive no. 46/2002 on food supplements and Directive no. 37/2006 amending Annex no. 2 to Directive 46/2002 on the inclusion of certain substances.

The notification of food supplements is a mandatory condition for placing these products on the market, which aims to ensure public health protection and commercialization of products that meet the quality statement and safety requirements. The notification is made via the *Romanian Health Ministry* for food supplements containing only vitamins and minerals and for those containing other substances with a nutritional or physiological effect the notification is made at the *Institute for Food Bioresources*, organism within the Ministry of Agriculture and Rural Development or at the Regional Centres of the *National Institute of Public Health*. In Romania, there are over 140 producers on the food supplement market and they must apply the procedures on Good Production of Food Supplements and/or Medicines (GMP) and HACCP procedures (Hazard Analysis of Critical Control Points).

Regarding the labeling of food supplements, the labelling process must comply with the codes of good practice in the labeling and advertising of food supplements and must be performed in accordance with the provisions of Government Decision no. 106/2002 on food labeling and Regulation (EU) no. 1169/2011 on the provision of food information to consumers.

The labeling, presentation and marketing actions must not assign to food supplements the property of preventing, treating or curing a human disease, not even referring to such properties. Also, these actions must not include direct statements or suggest that a varied and balanced diet cannot provide an adequate amount of nutrients.

Furthermore, the advertising of food supplements is allowed only after an approval of the content of the advertising material by the Ministry of Health and cannot refer to treatments, prevention or diseases. Food supplements are administered to maintain health, to promote the growth and development of the human body. Labelling must also comply with the provisions of the European regulations on health and nutrition listed in Regulation (EC) 1924/2006, Regulation (EC) 432/2012 and Regulation (EC) 563/2013, their use being permitted for commercial communications scopes, for consumers.

Since 2011, the Romanian Board of Food Supplements Industry (Patronatul Român al Industriei Suplimentelor Alimentare - PRISA) has been operating as a partner for public institutions and as a member of international organizations: Food Supplements Europe (FSE), International Alliance of Dietary/Food Supplement Association (IADSA). The Code of Ethics and the Code of Good Practice in labeling and advertising of food supplements, developed by PRISA, aim to increase transparency of the national market.

Although there is a legal framework at both national and European level, there is a need for a better control over the composition, quality and safety of food supplements, as countries face difficulties in establishing maximum doses of vitamins and minerals or harmonizing the list of botanicals, the ingredients that they contain, but also the mutual recognition of food supplements in Romania as a member of the European Union (PRISA, 2019). Data on food supplements use in Europe is still limited, the main data being available from commercial market analysis rather than consumer surveys (Kołodziej et al., 2019).

According to the Romanian Association of Manufacturers of Over-the-Counter Medicines, food supplements and medical devices (Asociației Române a Producătorilor de medicamente fără prescripție, suplimente alimentare și dispozitive medicale - RASCI), the Romanian over the counter product market, which includes over-the-counter medicines, food supplements and personal care medical devices, has recorded an increase of 14.4% in 2018. The growth for 2018 was slightly lower, compared to 2017, when the increase was 18.8%. The total value of this market segment was 3.552 billion lei in 2018, increasing from 3.104 billion lei in 2017 and reaching 4.03 billion lei in 2019. For the year of 2019, sales increased by 14.1% compared to 2018. Thus, the Romanian food supplements market, as part of the over the counter product market registered a value of 315 million euros in 2017, having an average growth of approximately 15% in the period 2014-2017, the highest growth taking place in 2017 (22.5%), with an upward trend in 2018-2019.

Despite the market growth, consumption per capita in Romania is lower compared to other European countries. In 2016, this indicator reached 13.07 euro per capita, a much lower than Italy (58.3 euro per capita), France (26.5 euro per capita) or Austria (25.7 euro per capita). In 2017, the value of consumption per capita in Romania increased to 17.5 euro (Popescu, 2019). The growth of food supplements market in Romania was driven by the following factors:

- the increasing concern of Romanians for a healthy lifestyle and the increase registered in education and informing consumers about the benefits of consuming food supplements;
- intense promotion, sometimes even aggressive, but in an honest and fair way that doesn't mislead consumers perception on this type of products;
- innovation enhancement in every market segment: innovations in recent decades have changed the way consumers view food supplements. Change is driven by fast and ever

accelerating advances in science and technology (Tăchiciu, 2019), making possible the emergence of innovative products for niche consumers.

Regarding the food supplement producers, an accurate quality control of their developing process and the resulted food products should represent one of the main rule in order to gain the confidence of customers, who, by choosing a reliable food supplement, will in turn support the manufacturers (Féart, 2020).

However, the rising of incidence of food supplements non-conformities and the level of food supplements non-compliance with legal requirements, especially mislabelling, represent a concern within the European market (Kowalska, Bieniek and Manning, 2019).

According to the European Commission (2018), the number of suspected violations relating to dietetic foods, food supplements and fortified foods reported by Food Fraud and Administrative Assistance (FFAA) increased in the European Union, between 2016-2018 by 8.5 times, from 26 to 221 cases and the main suspicions involve: mislabelling (58%), replacement/dilution/addition/removal in product (19%), absent/falsified documentation (12%), unapproved treatment and/or process (8%), intellectual property rights (4%).

In Romania, by centralizing and analysing the data published by the Ministry of Health in 2017, 2018 and 2019 it can be seen that the number of controls increased significantly and the following non-conformities were uncovered (Ministry of Health, 2017, 2018, 2019):

1. failure in notifying the competent authorities, as supplements are placed on the market without being notified (protein bars, various drinks with added vitamins and minerals);
2. improper labelling (lack of translation into Romanian; labels with statements referring to prevention, treatment or curing properties of certain diseases; labels with the use of allegations such as: anti-inflammatory or antiseptic, referring to the property of preventing a diseases; nutrition claims not specifying the sugar content, discrepancies between the notification data and those on the label);
3. marketing of food supplements without specifying the term "food supplement" on the label and the fact that they must not replace a balanced diet;
4. non-compliance with the conditions regarding the use of nutritional claims according to Regulation no. 1924/2006, for example: "rich in vitamin B1, chromium and selenium", not specifying the amounts of micronutrients or the mention "source of vitamin A", without specifying the amount of vitamin A contained;
5. improper use of the health claims on the label, in accordance with Regulation no. 1924/2006, for example: "linoleic acid contributes to maintaining normal blood cholesterol levels", not specifying the amount of alpha-linoleic acid in the product;
6. non-compliance with the legal requirements regarding commercialization of these food products (inadequate hygienic-sanitary conditions, inadequate storage, non-performance of the courses regarding basic notions for hygiene a by the persons handling the food supplements or not taking the mandatory medical examinations).

Results and discussions

Food supplements market analysis reveals several important **factors** which determined its evolution. Although the phenomenon is global, this analysis focuses primarily on the characteristics of the Romanian market, as a European Union member state:

- **An ageing population.** Romania is facing complex economic and social consequences of a population that is slowly but continuously demographically aging, caused mainly by the decrease of birth rate. In parallel, the increase of life expectancy determined a growth in number and share of elderly population (65 years and over).

- **Raising consumer awareness on medical preventive care.** At a governmental and nongovernmental level and also in mass-media there is an increasingly interest regarding preventive healthcare. Romanians consume food supplements, but without understanding the role of preventive economy, due to the lower levels of income.

- **The emergence of self-medication or self-directed consumer.** Consumers are interested in identifying their health needs and seek information on alternative channels (television, radio, internet, press). Currently, many consumers use online environments for health information that help them self-diagnose. Most often administered supplements, without an advised medical recommendation, are food supplements.

- **The offer of food supplements characterized by accessibility and high availability for any consumer category,** with a large number of domestic manufacturers and also importers. Realizing the market's development potential, many pharmaceutical companies have created new ranges of products registered as food supplements.

- **New sale channels** - food supplements are sold both through controlled channels (pharmacies, specialty stores) and non-supervised channels (internet, offices, therapists, newspapers, product presentations in a small circle, individual distributors, fitness coaches) to reach a broad and diverse consumer segment.

- **The transition from advertisements focused on ingredients** (e.g. omega-3 for heart health, lutein for improving eyesight) **to brand positioned messages.** To avoid difficulties in product differentiation, marketing specialists have begun to personalize messages, focusing on total benefits, to encourage the use of a wider range of products (Teichner and Lesko, 2013).

Following the theoretical and empirical research carried out, the following features of the food supplements market in Romania can be outlined:

1. quasi-regulated - the need of a single regulatory authority been highlighted, but also the need for a clearer, more transparent and predictable trend in the legislative framework, including in the segment of advertising;
2. emerging - with a growing consumption per capita, that is currently lower than other European countries;
3. fragmented - with many participants and relatively easy market penetration;
4. innovative - with new products that promote attributes, but especially benefits;
5. tempting for fraudulent practice - the need to intensify controls and preventive measures.

Conclusions

The consumption of food supplements can become an important part of a healthy lifestyle, which includes a balance diet and daily physical exercises. In order to provide potential health benefits, food supplements must be supervised through the common efforts of food products and food industry's quality control organizations, in order to commercialize only those products that have a scientific back-up regarding the proof of their nutritional value.

The development of food supplements' market in Romania faces a number of main challenges, including:

- **Social challenges** - involving the change of consumer's mentality and behaviour, as a long-term process, that requires education for a responsible consumption process;

- **Technical challenges** - regarding the production and commercialization processes which involves costs optimization strategies reported to quality levels; the production process must be based on food production good practices and an efficient control of the process;

- **Ethical challenges** – involving corporations' social responsibility, compliance with the commercial communication rules, with the Code of Business Ethics and the Code of good labelling and advertising practice for food supplements.

The dynamics of food supplements market in Romania is determined on one hand by the producers' ability to supply products that provide benefits which can be easily promoted and, on the other hand, by the variance of requirements, which are customized for each category of consumers. Food supplements regulations are evolving and have to take into account new

challenges, but the certification of the composition, quality and safety of food supplements must become a priority for all market players, so as to ensure high consumer protection.

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TOURISM - HISTORY, STATISTICS AND REALITY

Puiu Nistoreanu¹ and Shahrazad Hadad²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: puuunistoreanu@yahoo.it; E-mail: shahrazad.hadad@fabiz.ase.ro

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Abstract

As it is known, tourism is a social, cultural and economic phenomenon that involves people moving to countries or places outside their usual environment, for personal, professional or business purposes. Obviously, tourism activities have repercussions on the economy, on the natural and built environment, on the local population of the destination and on the tourists themselves. For this reason, tourism has become a popular global recreational activity. In the early 2000s, revenues from tourism activities increased significantly, but with the onset of the global economic crisis and the H1N1 virus there was a decline. But now, at the end of the second decade of the 21st century, tourism is becoming more and more like a mass phenomenon. Thus, the states have introduced, more recently, in their political speeches references to the facilities they offer to those who would be interested in visiting them, cities and regions compete with ingenuity to capture as many of the tourist flows as possible. But many examples from around the world show that the will to develop tourism activities can sometimes conflict with the expectations of local people. For this reason, we must ask ourselves whether the overexploitation of tourist areas does not lead to their degradation or loss of authenticity, instead of contributing to their development and the preservation of elements that define them. In conclusion, we believe that what we should be concerned about now should be responsible tourism and how it can be done in Romania.

Keywords

Tourism, development, globalization, geopolitics

JEL Classification

Z32, L8, R58

Introduction

As it is known, tourism is a social, cultural and economic phenomenon that involves people moving to countries or places outside their usual environment, for personal, professional or business purposes. These people are called visitors (and can be tourists or hikers, residents or non-residents), and tourism refers to their activities, which involve some tourist expenses (The World Tourism Organization (UNWTO), 2012).

Obviously, tourism activities have repercussions on the economy, on the natural and built environment, on the local population of the destination and on the tourists themselves. This generates multiple impacts, the range and variety of production factors needed to produce these goods and services purchased by visitors and the range of agents interested or affected by tourism, it is necessary to adopt an integrated approach to tourism development, management and control. This approach is strongly recommended for the formulation and implementation of national and local tourism policies, as well as the necessary international agreements or other mechanisms on tourism.

Practice has shown that tourism directly and indirectly generates an increase in economic activity in the visited sites (and not only), mainly due to the demand for goods and services to be produced and supplied (Nistoreanu et al., 2018). From this point of view, the multiplier effect of tourism activities on the areas where there is tourism was discussed and studied. In the economic analysis of tourism, a distinction must be made between the "economic contribution" of tourism, which refers to the direct consequences of tourism and is assessable, and the "economic impact" of tourism, a much broader concept, which is the synthesis of direct effects, indirect and induced tourism and to be assessed by applying models. Economic impact studies aim to quantify the economic benefits, ie the net increase in the wealth of residents resulting from tourism, measured in monetary terms, above the level that would exist.

Tourism beyond definitions and cold statistics

Tourism has become a popular global recreational activity. It is one of the strongest economic branches in the world. Here are some figures that show us what results have been obtained in this sector.

According to the World Tourism Organization, in 2004 about 623 billion U.S. dollars were made. \$; in 2008, more than 922 million international arrivals were recorded, an increase of 1.9% compared to 2007 (Nistor & Nedelea, 2018).

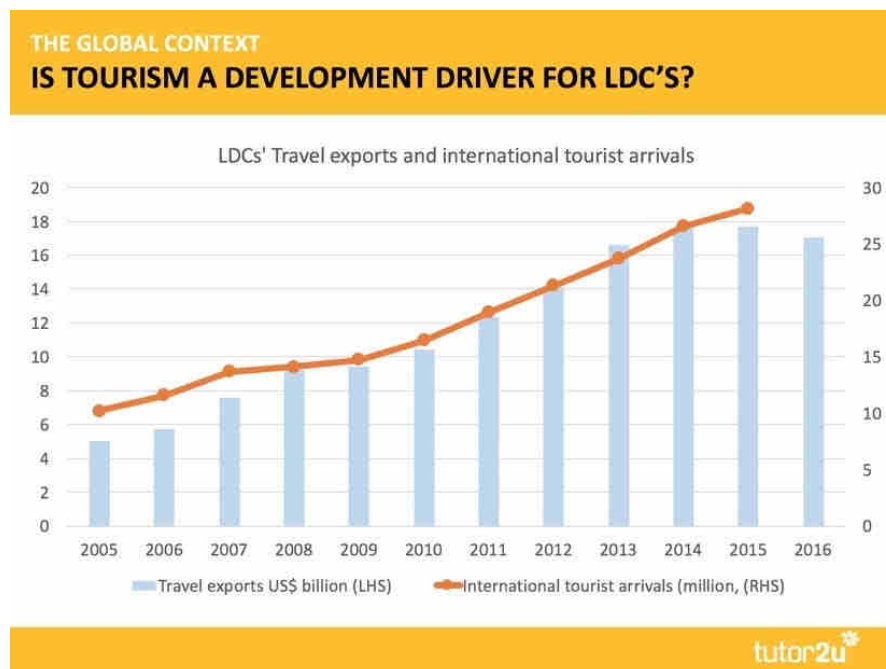


Fig. no. 1 Tourism and Economic development

Source: <https://www.tutor2u.net/economics/reference/tourism-and-economic-development>

International revenues from tourism increased in 2008 to US \$ 944 billion (642 billion euros), which corresponds to an increase in real terms of 1.8% (Fig. no. 1). With approximately 100 million employees worldwide, tourism also stands out as the most important employer. Cross-border travel accounts for 25 to 30 percent of world trade in services.

Following the recession that affected the world economy after 2000, international tourism demand slowed sharply since June 2008, with a 2% drop in global arrivals during the boreal summer months (UNWTO). This negative trend intensified in 2009, in some countries exaggerated by the H1N1 virus, and led to a 4% global decline in 2009 with 880 million international arrivals, and an estimated fall in tourism revenues of 6%.

Tourism has proved vital for many countries, such as Egypt, Greece, Lebanon, Spain and Thailand, and for some island nations (Bahamas, Fiji, Maldives) due to the substantial financial contribution obtained from the goods and services business and employment opportunities in the service industry associated with tourism (Onete et al., 2018). The service industry includes transport services (air transport, cruises, taxis) and hospitality services (accommodation, including hotels and resorts, entertainment revenues such as parks, casinos, malls, music revenues and theaters).

Now, at the end of the second decade of the 21st century, tourism is becoming more and more a mass phenomenon. From Paris to Shanghai, from Buenos Aires to New York, tourism is ubiquitous today (Fig. no. 2). Ubiquitous in a small number of places that concentrate more and more tourist flows. Ubiquitous in political discourses in which cities and regions compete ingeniously to capture these flows.

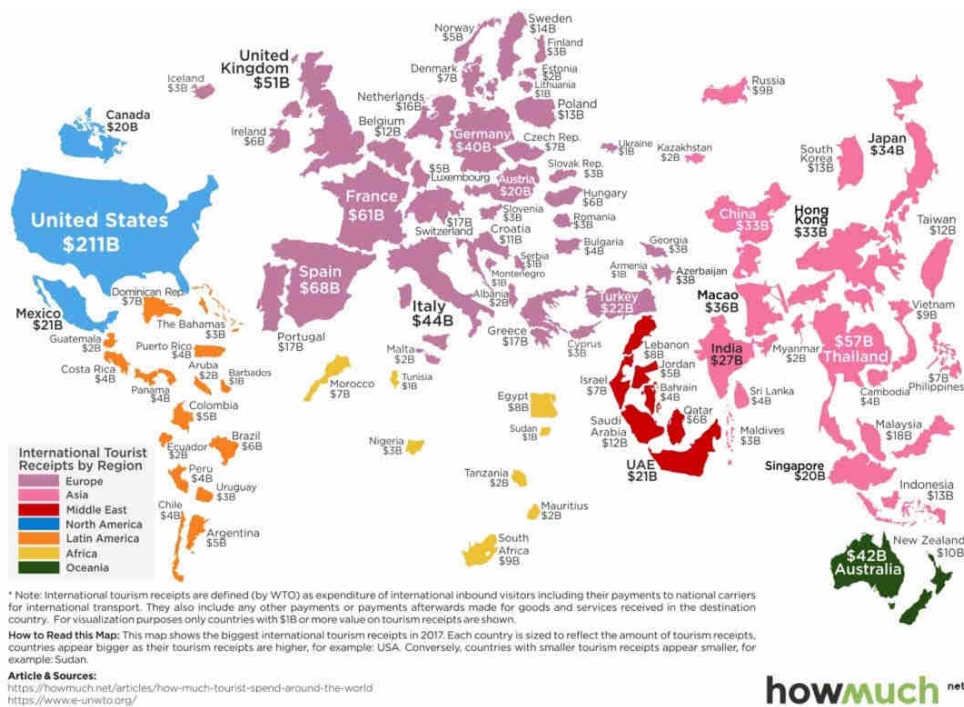


Fig. no. 2 Map of Tourism income

Source: <https://www.visualcapitalist.com/map-worlds-top-countries-tourism/>

In the book "Du voyage rêvé au tourisme de masse", geographers Thomas Daum and Eudes Girard analyze the evolutions that world tourism has known at the border between centuries. The two authors state that the geography of tourism, like that of globalization, has already changed dramatically since the end of the twentieth century and continues to do so at the

beginning of the twenty-first century. In the early 1970s, Europe accounted for 2/3 of international tourist arrivals and North America by just under 20%. Today Europe is almost 50% and should account for only 40% in 2030. In contrast, Asia Pacific (2% of tourist arrivals in 1970) already captures 22% of the tourist flow and should capture 30% (Daum and Girard, 2018).

What is happening at the national level? The developments are even more symptomatic: while the United States has always remained in the top 5 most visited countries, Canada (the second most visited country in the world in 1970) has won the top 15 destinations. On the contrary, China, the tenth most visited country in 1990, is now in fourth or third place (if we integrate Macao and Hong Kong). The challenge for the 2020s will be to know whether France remains the world's number one tourist destination (a place it has occupied since 1990) or whether China will take that first place.

At the scale of sites and tourist areas we see more and more Chinese or Russian tourists. Authoritarian regimes are no longer synonymous with restrictions on freedom of movement (except for dissidents challenging the regime); this is a major difference from yesterday's cold war world. Only North Korea is holding the entire population under house arrest.

These tourists from emerging societies change the world tourist landscape less by their still low presence than by their expectations and nature of what happens there: Europeans in front of Mona Lisa remember, even vaguely, the Renaissance, the emergence of individualism and the status of women in society. But the Chinese: what do they see in front of Mona Lisa and why do they want to see her? Is the Eiffel Tower still a testament to Europe's industrialization or a mere global icon? And the opposite is true - for non-Chinese tourists: what do we see in front of a Chinese temple or walking in the Forbidden City?

Are we dealing with an involution of the wishes of tourists? Is tourism still in the "entertainment society", as Guy Debord has analyzed since 1967? Is it just to offer spectacular and emotion or to be able to see, to stage the satisfaction of tourists who want almost everything because they pay the ticket to this huge reality TV show, like *Mondo cane*?

And as if all this were not enough topics for reflection, social networks are coming to us. They have become an integral part of the social practices of a large part of the world's population. Their use changes tourism practices and puts us in front of new challenges.

Social networks change tourism practices on many levels (Maiorescu et. al., 2014). They contribute to an image circulation that contributes to the structuring of the information and imagination of our contemporaries because "digital natives" are also "digital nomads" (Sârbu et al., 2018). And so in the fall of 2017, the Scottish Tourist Board opened "the first Instagram travel agency" called #Scotspirit. It offers tourists itineraries based exclusively on photos taken by network users. More comments, few guides and mystifications, just images, which are not supposed to "lie".

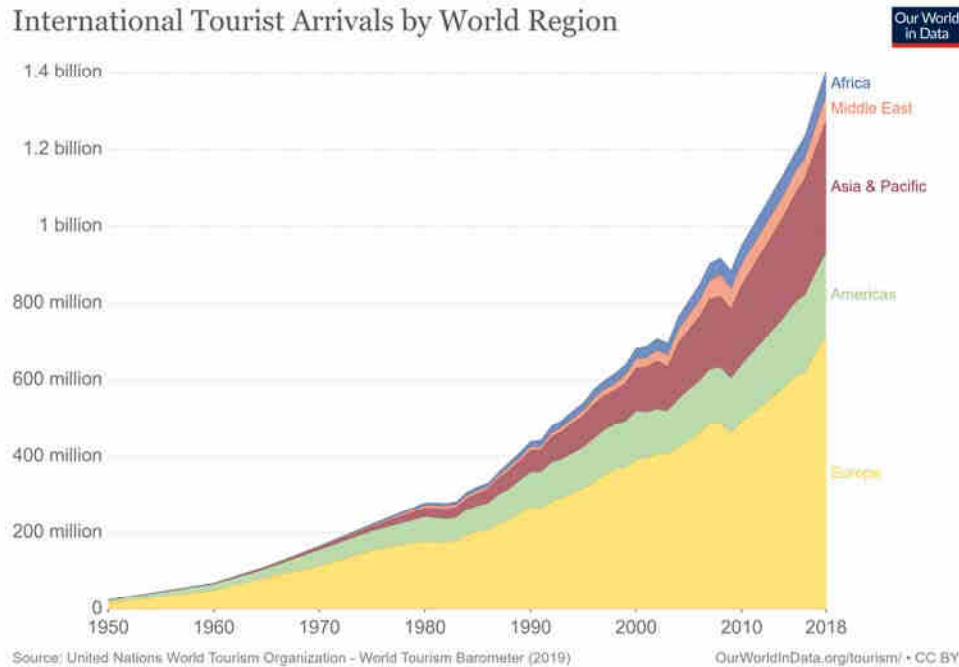


Fig. no. 3 International tourist arrivals by world region

Source: <https://ourworldindata.org/grapher/international-tourist-arrivals-by-world-region>

Social networks have also changed accommodation practices: Airbnb, couchsurfing, woofing. However, many people still cross the threshold of travel agencies looking for a contact or to consult. Similarly, it would be inaccurate to believe that paper guides have disappeared: almost 8 million travel guides sold in 2017 in France, even though 10 million had been sold in 2014 (Fig. no. 3). This says that the freedom to decide how to travel is growing.

Tourism from travel to geopolitics

Many examples from around the world show that the will to develop tourism activities can sometimes conflict with the expectations of local people. Today, tourism is starting to turn into a geopolitical tool.

Tourism - an activity that is at first distant from the spheres of work or civic life that is supposed to be relaxation - is becoming more and more a political issue, both due to the attraction of the spaces it allows (competition in territories) and the appeal it provokes. And this for two reasons: because it has negative effects for the inhabitants: land prices in tourist hypercenters; replacement of daily shops with tourist shops; clutter and noise. This is the case in Barcelona, Venice or Dubrovnik: demonstrations, hostile graffiti, the beginning of municipal regulatory policies are the signs. But also because the tourist rent, captured by a few, reveals the empty economic and social situation of the inhabitants. This is the case on the island of Capri, as well as other 36 Italian island spaces, where the inhabitants demand the organization of a referendum for the classification of Capri in ... "the missing island"! Indeed, for the 14,000 inhabitants, access to health care, because the functioning of public services depends on the connection, random and expensive, of the continent, the subsidies that could be improved.

But the coexistence of tourists / locals is not inevitable confrontation: living in one place today is a notion that refers to the coexistence of different populations (for example aborigines and

tourists) who do not feel the same, the same places. Or the way students of an old university campus who usually go to the library and the thousands of tourists passing through that place live the experience of "living"; which is a commonplace and regular fact for the former can be an exceptional and ephemeral course - which they probably do only once in their lives, those in the second category.

Once here, it is necessary to reflect on the fact that it is paradoxically possible for a massive tourist exploitation of places and regions to make disappear exactly what was their attraction. This is the consequence of a major contradiction of such a strong increase in tourism, which can hide greater disservices than we might think. On the one hand, the tourist arrangement of a place requires the development of transport infrastructures, housing, food products; providing space for public access, a redevelopment of so-called degraded natural spaces (Voinea, et.al, 2019). It transforms spaces whose a priori attraction is based on their authenticity, low density, apparent wildness. Increasing tourist traffic thus means standardizing them under the effect of the triple need for security, access and consumption; hence the feeling of frustration that can be felt. But this frustration today is that of a gentle, internationalized elite who often travel abroad.

Conclusion

However, it cannot be said that all tourists prefer this stamp of authenticity more than comfort, opportunities for organized leisure and souvenir shops. Chinese tourists arriving in Siem Reap to visit the temples of Ankor are certainly not in the romantic mood of André Malraux who arrived there in the 1930s. Others will satisfy their curiosities in souvenir shops, rather than admiring the temple pieces for a long time.

In August 2017, Charlotte Cieslinski - starting from an article published in the big daily "El País" - spoke about "tourismophobia" (Cieslinski, 2017). About the fact that communities in Spain, Italy, Iceland or Croatia - countries in the top of holiday destinations - were beginning to take a stand against what too much tourism means. In the years that followed, there was more and more talk about "overtourism". Manifestations of this kind have increased in recent years in Barcelona, Venice, Dubrovnik, Paris, London, Prague, even Budapest. What is it about?

In short, excessiveness occurs when there are too many visitors to a particular destination. "Too many" is of course a subjective subject, but it is defined in each destination by residents, hosts, business owners and tourists. When rental prices push local tenants to make room for holiday rentals, this is tourism. When narrow roads become blocked by tourist vehicles, this is tourism. When wildlife is scared, when tourists can't see landmarks because of the crowds, when fragile environments become degraded - all these are signs of excessiveness.

What we should be concerned about now should be responsible tourism. Harold Goodwin, director of responsible tourism, Manchester Metropolitan University's Institute of Management, even suggests a treatment of pre-tourism in an article published 2019. The conclusion of the article is that we can do tourism in this situation as well if we are aware of the existence of growth limits (Goodwin, 2019).

Fortunately, Romania does not have these problems yet. Again we could be like El Dorado ...

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INNOVATION IN THE FOOD SECTOR: MODELING THE FUTURE OF FOOD SECURITY

**Magdalena Bobe¹, Maria-Alexandra Toma², Robert Bumbac³
and Alexandru Jurconi⁴**

^{1) 2) 3) 4)} *Bucharest University of Economic Studies*

E-mail: magdalena.bobe@com.ase.ro, E-mail: toma.maria.a@gmail.com

E-mail: robert.bumbac@com.ase.ro, E-mail: alex.jurconi@gmail.com

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Abstract

From an historic perspective, the human need for food determined the emergence of one of the oldest markets on the globe, that had evolved for hundreds of years and whose evolutionary experience has radically shaped the sector from the hunter-gatherer period to the big manufacturing food industry of today. At a first glance, the development and progress registered over the years should characterize a modern sector, built on sustainable resources and infrastructures that can assure a long-term safety and security in the food sector. Despite these premises, the food sector today is further distinguished by food insecurity and food safety issues, aspects that have exceeded problems like hunger or food hygiene. This may be considered a paradox of our days, as there is still about 1 billion of the globe's population that has nothing to eat, while all regions worldwide are in danger of overweight and obesity epidemics. Thus, the current study aims to highlight the main struggle in this domain, by identifying the current food and nutritional policies and the action plans that the specific organizations in the field have put in place in order to address these problems. In this context, the market's accountability is ensuring a sufficient quantity of high-quality food, with an optimal nutritional intake and a fair regional distribution so that it can be accessible to as many people as possible. In this sense, hypothetical scenarios have been designed in order to be able to analyse possible solutions and topics that can be consider for improving the global policies.

Keywords

Food safety, food security, quality management systems, organic food, GMO, food market, food policies.

JEL Classification:

Q13, Q18, L15, L66, M11

Introduction

Food security remains one of the major global challenge that the world has to face both now and in the future (Chen et al., 2019) by trying to find answers to the question “how to feed the world in 2050”(van Dijk et al., 2020). Historically there are some regions in the world where food security have been a bigger concern than food safety considering the small percentage of 7-9% of the world’s arable land and 20% of the world’s population (FAO, 2020; Jen, 2017). This is justified by the fact that in 2018 in Asia there were still 1 billion people suffering moderate or severe food insecurity out of the total of 2 billion people having this problem worldwide (FAO, 2020). Considering that this segment of the population don’t have regular access to sufficient and nutritious food there is a high risk of malnutrition and health problems in their case. Moreover, the decrease recorded in agricultural cultivated land and in fresh water resources made countries like China to increase the imports of food over the next years (Yu and Han, 2020). Even if the Chinese government recorded an important progress in improving food safety standards in recent years, because of the shared responsibility in control of food safety between different national and local authorities (Jen, 2017), their traditions, food heritage and cultural dimensions (Vranceanu and Iorgulescu, 2016), the progress seems to be rather slow. The importance of food safety was proven one more time by the coronavirus pandemic that started in China, one of the reasons why all the concerns and legislation should work towards reducing potential foodborne illness. The interest for innovation in the food sector can be proved also by the large number and the upward trend in scientific papers written on food security and food safety, most of them being published by researchers from USA, China and UK (Hu et al., 2019). Food safety is a science centred activity and providing guidance for authorities and companies to take appropriate food safety decisions is mandatory (FAO, 2019a). The aim of this paper is to better understand the development and progress registered in the food sector by interpreting current global performance in terms of food security and food safety. Moreover, by understanding the existing patterns and by referring them to the pillar structure of modern food systems a consumer preference-based model has been outlined, offering an overview of the strong correlation between food safety and food security from the consumer’s perspective. The model includes also nutrition, poverty, trade, health and market development as key factors in shaping the consumer’s behaviour and needs. Considering the globalization of the food industry, the evolution from local to global markets, shipping products over longer distances and all the established regulations, a global perspective over the food system is needed (Nayak and Waterson, 2019; Popp et al., 2018).

1. The state of food safety and food security at a global level

Food safety and food security represent two interdependent notions, which are main concerns for many global organizations that are active in the field of agriculture, food market and nutrition. According to the general director of the Food and Agriculture Organization, food security cannot exist without food safety, which represents the base for healthy diets and lives (FAO, 2019a). This is proved by the strong correlation between food safety and food security index ($R=0.75$) in the case of Sub-Saharan Africa countries (marked with yellow in Fig. no.1) which have the lowest values for food safety and also serious problems in terms of food security.

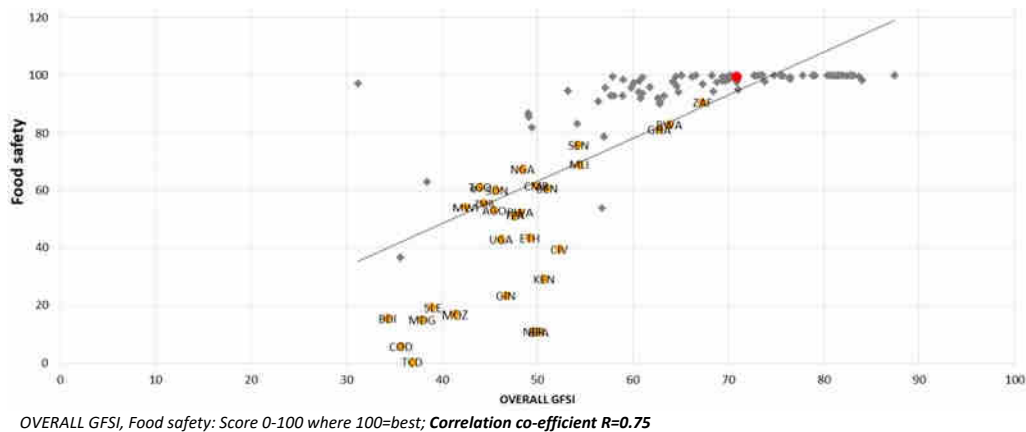


Fig. no. 1 The correlation between Food safety and the Global Food Security Index in the case of Sub-Saharan Africa countries

Source: EIU, 2019. The Economist Intelligence Unit: Global Food Security Index.
<https://foodsecurityindex.eiu.com/>

Food safety evolved one with the increased number of people involved in this process in different stage of development, better performing processing technologies, modern production practices and improved standards applied around the world (Nayak and Waterson, 2019). Shipping food over longer distances needed a development of the preservation sector, robust governance and harmonized regulations and standard, the food safety responsibility being shared from production to consumption in the entire supply chain (FAO, 2019a). It is clear that food safety has a major impact on food security, and this can be further improve through international harmonized food standards. Nowadays, when the population is more exposed to different food hazards and authorities responsible with inspections, especially for imported food, have no direct control over the production process, thus certification mechanism and appropriate communication between competent authorities is essential (FAO, 2019a). There are many factors that influence food security, which is a complicated issue considering the systematic challenges, the level of uncertainty and complexity of the problems that emerge worldwide. This can explain why since 2014 there was an increase in absolute and relative terms of undernourished people in Africa, Oceania and Western Asia (FAO, 2019b; Lenaerts, Collard and Demont, 2019). Climate change is one of the most important challenge for food security, leading to a decrease in agriculture productivity and these could lead to a risk in food security also for some developed countries that now are on the top of GFSI index (Chen et al., 2019). Thus extreme weather events, increasing level of CO_2 , temperature change negatively affects the global crop production needing more resilient and sustainable methods to be used in agriculture (Lenaerts, Collard and Demont, 2019). In spite of all the improvements in terms of an increase global access to food, there is still a significant proportion of the population in low-income countries suffering from food insecurity (Hossain, Mullally and Asadullah, 2019). At the same time globalisation has led to a higher variety of food, changes in dietary preferences and more complex distribution methods needed and longer supply chains put more pressure on food safety.

One essential step in improve food security worldwide is by measuring its performance, and taking appropriate actions where these are needed. Important progress has been recorded with different composite indexes that integrates multidimensional indicators used for performance monitoring in this field, most of them created by FAO. For food security, one of the most recent one is the Global Food Security Index (GFSI) developed by The Economist Intelligence Unit and used to provide a benchmark for the way in which 113 countries ensure access to

food in terms of affordability, availability, quality and safety (EIU, 2019). Based on this index in 2019 the highest number of countries included on the first positions in this ranking are from Europe while the worse situation remains in countries from Sub-Saharan Africa, as it can be seen in the following figure.

Top Ten, 2019				Bottom Ten, 2019					
Rank	Data	Score	Δ	Rank	Data	Score	Δ		
1	Singapore	—	87,4	0,0	113	Venezuela	—	31,2	+0,2
2	Ireland	—	84,0	+0,6	112	Burundi	—	34,3	+1,0
3	United States	—	83,7	+0,6	111	Yemen	—	35,6	-0,7
4	Switzerland	—	83,1	0,0	110	Congo (Dem. Rep.)	—	35,7	+2,4
=5	Finland	—	82,9	0,0	109	Chad	—	36,9	+2,0
=5	Norway	—	82,9	+0,5	108	Madagascar	—	37,9	+0,6
7	Sweden	—	82,7	+0,2	107	Syria	—	38,4	+1,3
8	Canada	—	82,4	+0,7	106	Sierra Leone	—	39,0	-0,6
9	Netherlands	—	82,0	+0,5	105	Mozambique	—	41,4	+0,5
10	Austria	—	81,7	+0,3	104	Malawi	—	42,5	+2,7

Fig. no. 2 Best and worst performers in Food security in 2019

Source: The Economist Intelligence Unit, 2019. Global Food Security Index.

<https://foodsecurityindex.eiu.com/>

At a global level it can be seen that important progress was recorded over the past decades in terms of food security, but unfortunately the food price crises from 2008-2009 proved how fragile is the current situation (Chen et al., 2019; Nayak and Waterson, 2019). These can be also a reason why food security remains an important concern worldwide. Moreover, Lenaerts, Collard and Demont (2019) indicated that the progress in cereal productivity is approximately 1% annual growth which is not sufficient for the future increase in demand, thus an improvement of the food system is required in terms of improved productivity through new technologies development, dietary change and food waste reduction. There are several attempts to respond to this challenge and to identify future solutions. One of them is scenario planning, being a good mean to deal with uncertainty and complex issues, which can be used in strategic planning and to guide policy makers (van Dijk et al., 2020). Often, this method suppose finding answers to questions like “What will happen?” or “How can we reach a target?” (van Dijk et al., 2020).

2. Scenario planning: agricultural potential in shaping global food policies

One of the major concerns of global organizations like World Health Organization or Food and Agriculture Organization is to implement a comprehensive strategy which can include in an effective manner both preventive and corrective actions that are focused on both food safety and food security issues.

In this sense, organizations are trying to collaborate with governments and corporations in order to develop and improve food policies, by better understanding the modern vision of the food sector driven by consumers’ needs, environmental necessities and industry’s potential resources, aspects that should be harmonized taking also into consideration local particularities that exists in several countries or regions.

Nevertheless, taking into consideration the complexity of modern food systems, this represents a difficult task. According to the High Level Panel of Experts on Food Security and Nutrition, a food system gathers all the elements (environment, people, inputs, processes, infrastructures, institutions etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socio-economic and environmental outcomes (HLPE, 2017).

Thus, when talking about food policies and innovation in this sector, the starting point should represent understanding the actual system, its main structure and constituents that are playing an important role in shaping the current food market. Regarding an actual food system, beside nutrition and health outcomes, different studies identify three main pillars that represent entrance and exit points for the act of nutrition (Walls et al, 2019):

1. food supply chains;
2. food environments;
3. consumer behaviour and needs.

If we take as an example some of the latest food policies or market developments that have been issued since the beginning of 2020 in different countries or regions, across the globe, it can be observed that the vast majority involve economic and financial aspects like price regulations or import duties. These actions are directed more towards the regulation of the food supply chain or the defining of different food environments (economic, political, socio-cultural etc.). However, the consumer will be influenced by these actions, but the results are not exactly driven towards the consumer's needs.

Regulation of prices for certain goods can have a positive impact for regions that are characterized by poverty, but from a consumers' point of view the need of food is strongly linked to resolving safety, security and nutritional issues in order to be able to create the necessary premises for a for a general positive state of health.

Consumer behaviour and needs represent the decision-making matrix that determines the type of food acquired for consumption in order to allocate the optimal amount of nutrients within the household, while using diversified and constantly available natural resources that will not affect their health, neither the health of the environment.

Thus, shaping global food policies by consumer's need should represent one of the main concerns of food and agricultural organizations, as when nutrition, safety and security of the act of feeding are in balance, the food market will follow and so will the economy.

There is a general practice that in poor countries food policies aim to resolve food security issues over food safety or a healthy nutrition (Pelletier et al., 1995), this being usually politically prioritized. On the other hand, in more developed countries, food safety is prioritized over a healthy nutrition, as overproduction and imports determine a large volume of resources that enter the food chain, where it can be subject to different type of hazards.

When trying to understand a certain pattern in the food sector, outlining a consumer preference-based model can provide highly valuable information on how different policies can be shaped in order to optimize the act of feeding as a quality requirement.

In this sense, the following model was designed in order to highlight the strong correlation between food safety and food security from the consumer's perspective. The model also pictures the role of nutrition, poverty, trade, health and market development in shaping the consumer's behaviour and needs. The expected output is understanding what are the main determinants that can contribute to upset the balance of a normal food system

As it can be observed in Figure no. 3, **food safety** is highly influenced by the first pillar and all stages in the food supply chain, where different types of hazard can occur and influence the results of the act of nutrition. Logistic phases can play a very important role in maintaining food's sanogenetic characteristics and avoidance of contamination. Starting with the production phase, processing methods or distribution stages and even the retail of food products can influence the quality of final product that reaches the table of the consumer.

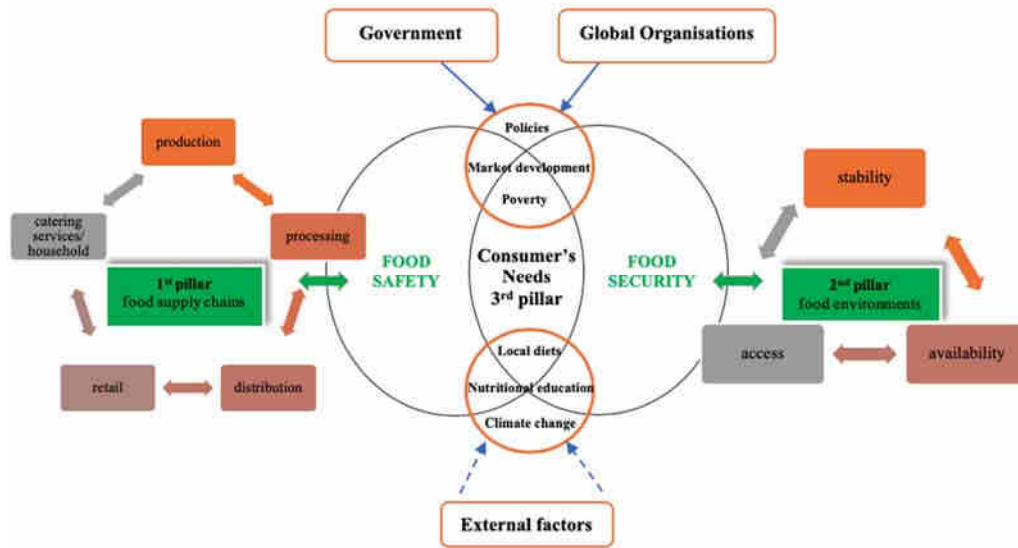


Fig. no. 3 Modeling food safety and food security issues by consumer's needs

Source: author research

Moreover, contamination risks can appear even in the consuming phase, regardless the output form (restaurant or other food services or households). Biological, chemical, physical and human hazards can start at an incipient stage of the production phase, by failing to comply the animal and plant health requirements or by not respecting animal welfare. Further down the production and processing phase, hormones, chemical residues or bacteria can be found in food products, reaching values that can put in risk human health. Overall hygiene plays a very important role, starting from the production phase throughout all processing, distribution, retailing and consumption phases. For example, animal products can represent a safety threat if they are not properly refrigerated in the supermarket or at home.

Nevertheless, human error or fraud can also determine safety issues. Here we can add as an example improper labelling of food products, like not mentioning on the label specific ingredients that can cause allergies or on the other hand adding a specific superior ingredient that is replaced with a lower quality one.

Thus, food policies must be directed toward controlling all food chain phases in order to prevent faulty handling, storing or preparing of food products that can determine infection or other type of food diseases and help in maintaining a balanced nutritional level that ensures a healthy diet.

Food security is directly influenced by three main determinants – stability, access and availability. In other words, all people, at all times (stability) should have the necessary social and economic resources (access) in order to benefit from safe, nutritional and sufficient food (availability) for maintaining a healthy diet.

But nowadays, the food sector is characterized by three main security issues: malnutrition, food lost and waste combined with the general trend of population growth. Also, the security aspects are directly influenced by the demographic conditions, economic conditions, environmental conditions and natural resources as well as social and cultural conditions.

Also, security issues differ from a region to another. Developed countries are facing food lost and waste in the general context of an unhealthy diets, that involve a higher intake in calories but lower intake in nutrients, causing obesity and other related diseases. On the other hand, the countries from the third world are facing with the lack of food availability, this causing a

poorer nutritional content and a reduced calorie intake, that determine malnutrition and associated diseases.

Thus, food safety and food security represent important objectives for the global food policy makers, taking into consideration that solving these issues can determine positive outcomes on human health by introducing nutritional education and healthy diets as daily habits.

Nevertheless, from a political and economic point of view, one of the biggest challenges for governments will be to find solutions that can integrate healthy nutrition practices and resources into the food security and food safety policies. This means that healthy nutrition related subjects should be more promoted on political agendas.

Conclusions

Without innovation in the food sector, food safety and food security goals cannot be achieved. Moreover, the future challenges will be more difficult to address as all actions must take into consideration sustainability principles too. Climate change, extreme weather events, increasing levels of CO₂ or temperature change will still raise questions regarding of how resilient the actual agricultural methods are and how long can they still be use before causing effects and repercussions that can no longer be corrected.

Talking about the future, food availability will always have a representative impact on the development of human society and will remain essential for the evolution to modern era of the third world countries. And better than availability, governments of countries that are facing difficulties and problems regarding malnutrition and foodborne illness, from Africa, Asia, Oceania or South America must also integrate in their food policies concepts like affordability, quality and safety.

Furthermore, supply chains must adapt and also understand that eliminating hunger does not represent the only condition for solving their problems. Retailers must ensure healthy, nutritionally dense and safe food products regardless of the regions or market where they operate. Food systems will need to integrate and use in a sustainable way all available resources (land, energy, water, money, waste management, transport, science and technology) in order to eliminate legislative variations across countries and unify requirements from one commodity to another.

Thus, consumer's needs must always represent the starting point in when building or expanding food policies, legal frameworks or food systems. Organizations must finely define the differences that occur in consumer's behaviour by region and the main determinates that cause these differences, like the income level, diets, local conditions and government infrastructures.

Taking into consideration that in the near future the food market will need to assure the necessary resources to feed over 9 billion people (King et al, 2017), it is understandable that all efforts must substantially increase and be directed to safe and sustainable food production, incorporating in the food chain both big producing companies and smallholders.

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TOP-MANAGEMENT IMPACT FACTORS PREVENTING TURNAROUND PROCESSES

Jörg Bothe¹, Dorin Maier² and Robert Bumbac³

^{1) 3)} *The Bucharest University of Economic Studies, Romania*

²⁾ *Technical University of Cluj-Napoca, Romania*

E-mail: joerg.bothe@gmx.de; E-mail: dorin.maier@gmail.com,

E-mail: robert.bumbac@com.ase.ro

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Abstract

The article focuses on identifying the impact factors of top-managers to prevent turnaround processes in times of increasing economic difficulties within medium-sized German companies present on the international market. The data collection for this study was based on conducting interviews and studying the activity of four companies. The main criteria to differentiate the four companies were size, products and services, ownership and market situation. The paper managed to determine different overall valid role behaviors of top-managers to lead companies in a sustainable manner. Increasing international competition, higher shareholder expectations and fast developing international markets position the top-management into the focus for fast turnaround processes. The impact factors of this small but important group of people are the key for long-lasting company's success and a secure way to maintain work places.

Keywords

Leadership, top-management, complexity, sustainability, turnaround, change.

JEL Classification

M10, M16, M19

Introduction

In the current global economy, the increasing international competition and the change of technology force companies to continuously adapt to the environment in which they operates (Schmid et al., 2017; Marquardt et al., 2018). However, not all changes attempts are successful. A significant number of firms are facing the challenge to fail in adapting and as a result they experience serious loss of performance. Therefore, managerial response to organizational performance decline is considered critical in maintaining the survival of a company and to remain a viable business entity (Ketchen and Palmer, 1999; Lohrke et al.,

2004; Lutas et al., 2020). Top managers are often in charged to formulate and implement effective transformation strategies needed to reverse a decline in the organizational performance (Lohrke et al., 2004; Ceptureanu et al., 2018). Such approaches on top management responsibility are frequently encountered in the practitioner community.

Although a higher interest in this topic is from practitioners, the interest in the role of top management in a turnaround context is evolving also in the scientific literature (Ghazzawi, 2018; Liu, 2020). According to Abebe and Myint (2014) despite a significant amount of empirical work in studying the relation between top management and turnaround performance, in general the findings are inconsistent and sometime contradictory (Trahms et al., 2013).

The article focuses on the impact factors of top-managers or top-management teams of German based midsize industrial companies that are acting at an international level in times of increasing economic difficulties. Despite all the problems encountered by such companies, it can be observed that managed to survive on the market. In 2019 a turnover drop of 25% up to 50% in some German industrial companies was noticed. In this situation the implications were imminent lack of liquidity, low capacity utilization, negative results, unstable financial situations, reduction of work schedule job loss or even closing the company. At the same time, there were other companies that managed to succeed as in the previous years, despite of all comparable economic difficulties registered in their industrial sectors.

The purpose of this paper is to present the related top-management impact factors preventing companies' crises and the resulting turnaround processes. The main question to be answered is: "What are the impact factors of top managers to keep their own company on a successful track or at least to prevent turnaround processes?"

Turnaround processes are described as a set of strategic and operational activities for companies that experience poor performances in a period of time to ensure economic survival (Robbins and Pearce, 1992). The top management impact factors are defined based on the interviews that were held with CEOs of four companies, part of comparable industrial sectors.

Research Methodology

The current research identifies the impact factors of the top-management in preventing turnaround processes in companies. The discoveries of the article are based on a selection of four interviews with CEOs of industrial companies acting in the same industrial sector, from a total of 25 interviews with CEOs of companies of different size and from different industries. The interviews were taken through personal meetings in open discussions or by phone, and were planned as an ongoing process taking place over several weeks or months. Therefore, a standardized interview form has not been prepared or used. All interviews were based on a non-disclosure agreement, which restrict to mention among others the name of the company or the name of the CEO. Even if specific market and technology conditions were different between companies, the basic situation and conditions among them were comparable. A long-lasting successful company will be set as a reference model. The general success factors of the other three companies and the role and behavior of their top-managers will be compared to the reference model and the implications will be discussed. The interviews and project analysis took place between April and November 2019.

Market and Industry description

The companies that were evaluated are part of the classical and traditional midsize industrial group in Germany. This industrial group with a worldwide leading market position is one of the biggest German industrial sectors with 6523 companies and a total turnover of 232 billion euro in 2018 (Anon, 2019). This group delivers 3.5% of the Gross Value Added of Germany (Breitkopf, 2018).

The industrial group, and thus the evaluated companies, is characterized by:

- using mechanical engineering,
- having companies with a long history,
- recording a turnover range between 50 - 1000 million euro,
- a number of employees from 250 to 5000,
- a high number of mechanics and engineers from all fields,
- a high impact of the German market,
- generating worldwide exports through subsidiaries, external distributors and agencies,
- long-lasting relationships with customers and their sales partners,
- extensive know-how of markets, products, applications and competitors,
- high technical specialization in a complex environment of technical development, cost effective production, contract risks and effective sales organization with low profit margin,
- a level of profit from the turnover is between 2-5%, and only in a few companies this can reach up to 12%,
- worldwide high economic activity for the last decades, registering a high market demand.

Companies' description

Each company included in this study was defined by (1) size (turnover, number of employees), (2) company development (3) market development, (4) ownership, (5) actual situation. All the evaluated companies are operating in the same industrial sector, and the particularities of each company is presented in the following table.

Table no. 1 Specification of the evaluated companies

Company	Employees (2019)	Sales (2019, mil euro)	Business Development (2011 - 2018)	Market Development (2011 - 2018)	Ownership	Actual Situation (2019)
1	2,500	700	++	+	Family	++
2	1,000	400	+	++	Foundation	-
3	800	140	0	+	Family	-
4	800	140	-	+	Foundation	-

Source: Authors' proposal based on CEO statements at the time of the interview

As it can be seen, in the conducted research there were included two companies having family ownership and other two having foundation ownership. There is an important difference in terms of employees' number inside each group of companies. In the case of family companies the difference between them is of 1700 employees, while in the case of those owned by foundations the difference is much smaller of only 200 employees. In order to have a unitary evaluation and to better understand the criteria used in analyzing companies performance, we present in Table no. 2 a detailed explanation of the scale used.

Table no. 2 Evaluation criteria

Item	++	+	0	-	--
Business development since 2011	Growing more than 10%	Slightly growing (1-9%)	Scarce goal achievement	Layoffs of employees	Closing facilities
Market Development since 2011	Fast Growing	Slightly growing	No development	Slightly shrinking	Fast shrinking
Actual Situation	Growing more than 10%	Slightly growing	Scarce goal achievement	Layoffs of employees	Closing facilities

Source: Authors' proposal based on CEO statements at the time of the interview

Top-management role

The long lasting and successful Company #1 will be set as a reference model. The success factors of the other three companies will be compared to the reference model and all the implications will be discussed.

Company #1 CEO Statement:

Vision: Since the beginning in 1960, we have a clear vision. We deliver the highest added technical value and profitability to our worldwide customers. On a regular base, the Top-Management discusses the vision and the values with the Family Board seeking a continuous development of the company on the Codes of Conduct. The negative reporting about plastic waste and plastic ocean pollution is the main challenge of the future. Nevertheless, the vision is unchanged for the last fifty years. Long-term thinking and acting is one of our key success factors.

Values: Economic success, world leadership technology, sustainability, responsibility (both social and of the group management for their success), maximum organic and strategic growth in long-term thinking, and last but not least, passion. We live this values in challenging and generating uncomfortable discussions on all Management levels. We respect the higher potential of every person. Conflict readiness and consensus is necessary on both sides for a sustainable company improvement. All this needs strong trust.

Positioning: We are clearly positioned as the top-specialist in field for specific packaging foils.

Strategy: Organic and strategic development of the company to strengthen our undisputed worldwide technology leadership combined with a long-term customer relationship.

Operation: We are operating on clear, challenging and individual targets for our different group companies. A tough controlling system through the complete added value processes and the continuous improvement process are essential.

Understanding the role of the top-management:

- challenge the vision with the environmental situation,
- controversial discussion partners and ready for conflicts with Family Board and Group Managers,
- strictly devoted to the vision,
- practice a close cooperation between the owner family and the company,

- challenge the group companies,
- support the group managers.

Comparison between the evaluated companies

In the next stage of the research we compared the other three companies with the reference model Company #1. The main comparison criteria used are: vision, values, positioning, strategy and operation. For the comparative analysis we used a comparison grid, presented in Table no. 3, in which there was used the same evaluation criteria described in Table no. 2. In the comparison grid we include also some comments relating to each evaluation factor.

Table no. 3 Comparison between companies

Com pany	Vision	Values	Positioning	Strategy	Operation
1	++ Clear vision to guideline operation	++ Living values which support the vision	++ In line with vision and values	++ Logic aggregation	++ Challenging, supportive and controllable
2	0 Abstract vision available	0 Values are defined on an abstract level	0 No use for market and technology	0 Short term target fulfillment	- Weak controlling and staff management
3	- Statement based on the history. Future orientated vision not available	- Abstract defined values without any practical use	0 Considering in house possibilities w/o reflection of market demands	0 market share improvement without statement to profitability	-- Weak processes, very low profitability, bad internal cooperation, no existing controlling system, poor staff management
4	- General description and unclear intentions	0 Abstract defined values without any practical use	0 Technology leader with little competitive advantages	- No explicit strategy for the future, except to survive	-- Weak processes, no profitability, bad internal cooperation, no existing controlling system, poor staff management

Source: Authors' proposal based on CEO statements at the time of the interview

The four evaluated companies are a part of the well-known German mid-size mechanical engineering industry. All companies were founded by engineers and none of the founders is still alive or any of the family members is active in the top-management. All companies are technology wise on the highest level in their specific field. The specific world-wide market developed almost equally over the last decade.

The comparison grid revealed some evident differences between these companies. In the case of *vision* we can observe a significant difference between Company #1 that has a clear vision to guideline operations while Company #4 has unclear general descriptions of its intentions. Analyzing the *values* it can be observed that only Company #1 has living values which support

its vision while the rest of the companies have a more abstract definitions of the values. In case of *positioning* is in line with vision and values for Company #1 while Company #2 does not use the market and technology at all to improve its position on the market. Discussing about *strategy*, Company #1 has a logic aggregation while Company #4 has no explicit strategy for the future, having only the instinct to survive. The same difference is encountered in the case of the last evaluation factor, the *operation*, where Company #1 has challenging, supportive and controllable operations the other companies have weak processes, very low profitability, bad internal cooperation, no existing controlling system and poor staff management.

Understanding the top-management role

In the next phase of the research the top management role was analyzed. In this regard it was used the same method as in the case of the companies' results comparison, through a comparison grid (Table no. 4) with the following comparison criteria: challenge and devotement to vision and values; partner for discussion and cooperation with board; readiness for conflicts; challenge, control and support the organization. There was used the same evaluation criteria and also comments were included for each of them.

Table no. 4 Comparison in top-management role

Com pany	Challenge and devotement to vision and values	Partner for discussion and cooperation with the board	Readiness for conflicts	Challenge, control and support the organization
1	++ Accepted	++ Accepted	++ Accepted	++ Balanced
2	- Not accepted	- Role understanding as a recipient of orders	- Low	- Almost no challenges, over supporting, limited controlling systems
3	-- Not accepted	- Role understanding as a recipient of orders	-- Very low	-- Little challenges, no support, no controlling system
4	-- Not accepted	- Role understanding as a recipient of orders	- Low	- No challenges, no support, limited controlling systems

Source: Authors' proposal based on CEO statements at the time of the interview

The qualifications of the CEOs are comparable. All of them are university graduates, have minimum 15 years of experience in C-Level positions and reached an age of 50 – 60 years. The setting itself of the interviews with the four CEOs were interpreted and became part of the result of this research. For example the CEO of Company #1 was well prepared in all three interviews and we have not been interrupted even a single time. As in the case of result analysis the top management role comparison reveal differences between the studied companies. For the first evaluation factor, *the challenge and devotion to the vision and values*, Company #1 accepted while the other companies does not accepted. When dealing as *partners for discussions and cooperation with the board* the top managers from company #1 accepted

this role while the top managers from the other companies understand this role as a recipient of orders. In case of *readiness for conflicts* the same situation is present, company #1 accepted this role while the other companies have a low or a very low degree understanding this role. For the last evaluation factor, *challenge, control and support the organization*, the top managers of company #1 understand this as a balanced role while top managers of company #4 have no challenges, no support and limited controlling system.

Conclusions

In order to identify the impact factors of the top management in keeping the company on a successful track or at least to prevent turn around processes, there was studied the results of the companies, the CEOs perspective and the role of top-management. The most important observations were: (1) the ownership and the long history of the companies shows no influence on business performance; (2) slow market development can be overcompensated by high performance of the top-management; (3) the positive business development of Company #2 was strongly supported by an intensive market development; (4) CEO as a partner for board discussions is obviously linked to readiness for conflicts; (5) two directional readiness for conflicts seems to support business development; (6) challenge, control and support as well as understanding for process quality is linked to readiness for conflict; (7) lack of readiness for conflict seems to be linked to: a) no or limited controlling processes and capabilities over the complete business process, starting with sales and ending with post order calculation; b) lack of challenges and support to sales organizations.

Finally, understanding the comparison of the four top-management role shows that a clear vision and values supports the partnership between Supervisory Board and top-management. This partnership starts already in the search for the character and the personal strength of the top-manager. Readiness for conflicts in two directions seems to be a major personality characteristic to lead a company to continuous success. Readiness for conflicts leads to clarity in vision and consistent actions. Top-managers with an understanding role as an accepted partner to the Board and a supporter, controller and challenger to the company, needs the readiness for conflicts in all directions. A validation for these results is that in January 2020 Companies #3 and #4 started turnaround processes.

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SLOW TOURISM IN THE VIEW OF THE RESEARCHERS

Georgică Gheorghe¹ and Andreea Marin-Pantelescu²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: georgica.gheorghe@com.ase.ro; E-mail: marin.andreea@com.ase.ro

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Abstract

Today, tourism has become one of the most dynamic industries in the world, with an impact on the lives of hundreds of millions of people. This dynamic is largely due to the phenomenon of globalization which has brought several benefits to modern society, but which does not always prove to generate positive vibes. With this background the slow tourism current appeared, one that promotes a different way of visiting a destination. This paper aims to precisely identify the ideas that are circulating in the literature about this new form of tourism since its inception, somewhere in the mid-2000s. The Web of Science (Clarivate Analytics) database was used to fulfill our objective.

Keywords

Slow tourism, Slow Travel, Slow movement, Slow Food, authenticity, local community

JEL Classification

Q59, R00, Z32

Introduction

In the last years tourism have become a mass fenmen that involves more that 330 million people that are working in this industries and is responsible for travel of 1.4 billion (2018) people abroad (WTTC, 2019). As an opposing to this increasing trend of people traveling the slow tourism current appeared in the mid-2000s. This form of tourism is a part of the global phenomenon called slow movement, one that appeared at the mid of 1980's. The initiator for this movement was the Italian environmentalist Carlo Petrini who was one of the promoters of a protest against opening of a McDonald's restaurant in Piazza di Spagna from Rome (Slow Food, n.d.).

Slow tourism includes a highly salient ethical side when tourists met locals. Thus, slow tourism activities are carried out in direct relationship with the local community, customs, gastronomy and traditions that are required to be respected and preserved over generations. Matos highlights the need for tourists to participate in clean, environmentally friendly activities, thus ensuring the sustainability of the mountain area. It is not surprising the concerns of people from the Alpines region regarding: nature conservation, imposing of rules

regarding the elimination of mass tourism, finding modern recreational solutions that do not disturb nature (Matos, 2004). Molz consider Slow Tourism as an alternative to get integrated into local communities and to enjoy the customs, traditions, gastronomy in a soft way without harming the environment, residents and attractions (Molz, 2009).

Research methodology

We conduct our research on the Web of Science (Clarivate Analytics) database platform. We search all the articles that have as key word “Slow Tourism”. All the articles were considered. After identifying all the articles, we conducted an analysis of their content and we extracted the main aspects regarding slow tourism. We were also interested about the citations trend for all the articles that have as a main topic Slow Tourism.

Another objective was to determine in which type of journals Slow tourism articles are published.

Results and discussions

We start our research at the beginning of March 2020. we use the search engine provided by the Web of Science website and used as topic for search “Slow tourism”. At the date of research we found 44 articles that have as key word slow tourism. The first one was published in 2004 and the last one in late February. We observed that in the last years this topic gain importance in the research activities of researchers.

Considering the fact that the total number of articles was small we consider that by analyzing each of them will be the best approach in order to fulfill our research goal.

We include our finding in Table 1

Table no.1 Research on the concept of slow using Web of Science website

Years	Authors	Titles	Research study
2004	Matos, R	<i>Can slow tourism bring new life to Alpine regions?</i>	“Slow tourism” is focuses on the slowing down of life rhythms. “Slow tourism” obeys particular parameters and criteria (i.e. slow transportation and energy-saving devices). This concept could contribute to the diversification of tourism.
2009	Molz, Jennie Germann	<i>Representing pace in tourism mobilities: staycations, Slow Travel and The Amazing Race</i>	This article examines the way popular representations of tourism make sense of pace within the context of Western modernity and asks how certain ethical and ideological values come to be associated with speed, slowness or stillness.
2011	Pangbourne, Kate	<i>Slow Travel and Tourism: Tourism, Environment and Development Series</i>	slow travel feeds the soul, supports destinations and minimises tourism’s global and local impacts. <i>Slow travel represents a ‘greenwash’ for tourism.</i>
	Buckley, Ralf	<i>Tourism Under Climate Change: Will Slow Travel Supersede Short Breaks?</i>	Slow travel represents now travelling professionals Slow travel well become a significant social phenomenon, linked to patterns of human mobility.
	Buiatti, Stefano	<i>Food and tourism: the role of the “Slow Food” association</i>	Wine makers, restaurants and hotels have formed a regional branch of a national association, called Movimento Turismo del Vino (Wine Tourism Movement) based in the region of Umbria, Italy. According to Buiatti the quote on which the slow food concept is based is “ <i>to eat is a necessity, but to eat intelligently is an art</i> ”.
	Dickinson, Janet E.; Lumsdon, Les M.; Robbins, Derek	<i>Slow travel: issues for tourism and climate change</i>	In our times alternatives are being considered to combat natural disasters and environmental pollution and authors are confident that Slow Travel is one of the solution. Going slow generates benefits for holiday destinations, for the local community and for tourism.
	Warren, James P.	<i>Slow travel and tourism</i>	Warren emphasis that the whole effort for promoting this new form of slow tourism is based on reducing the carbon emissions, all in the context of global climate change.
	Heitmann, Sine; Robinson, Peter; Povey, Ghislaine	<i>Slow Food, Slow Cities and Slow Tourism</i>	Slow travel is the way the tourist approaches the journey as slower travel or journey by bus, train, cycle, or on foot.
2012	Conway, Dennis; Timms, Benjamin F.; Caffyn, Alison; et al.	<i>Slow Tourism: Back to Bullock Cart Days!</i>	Slow travellers experience ‘localness’ by undertaking ‘day-tripping’ around a base, where they stay-a-while in a vacation-rental, and enjoy local foods consumed at the same leisurely pace. Slow travel and slow tourism are not the same, as slow tourism is a more complex activity including slow travel and slow food.

	Timms, Benjamin F.; Conway, Dennis	<i>Slow Tourism at the Caribbean's Geographical Margins</i>	The slow tourism stakeholders are guest-house providers, bed & breakfast owners, naturalist guides, fishermen, and such.
2013	Molz, Jennie Germann	<i>Slow Tourism: Experiences and Mobilities</i>	Slow tourism is seen as an emerging phenomenon that address consumers concerns regarding leisure time, environmental sustainability, and embodied experience of the places.
	Georgica, Gheorghe; Daniel, Bulin; Roxana, Dorobantu Maria; et al.	<i>Slow Movement as an Extension of Sustainable Development for Tourism Resources: A Romanian Approach</i>	Slow Travel in Romania it is developed at a low scale, although our country still retains for decades old traditions and customs. Our country continues to lack of trained people which can provide and promote tourism services in general and especially for Slow Travel.
	Conway, Dennis	<i>Slow tourism: experiences and mobilities</i>	Several websites make claim to the phenomenon offering 'slow travel' experiences, ranging from fully booked tours to long stay accommodation.
2014	Cosar, Yesim; Kozak, Metin	<i>Slow tourism (Cittaslow) influence over visitors' behavior</i>	'Slow travel' and 'slow tourism' are both outgrowths of the slow food movement and are underpinned by the same senses of social well-being.
	Noor, Farah Atiqah Mohamad; Nair, Vikneswaran; Mura, Paolo	<i>Rail travel: Conceptualizing a study on slow tourism approaches in sustaining rural development</i>	Slow tourism creates benefits for the rural towns' sustainability. To gain that the perception of tourists on travelling slowly by train should first researched. Encouragement of travelling by rail to the rural towns will enable improved utilization of the existing rail network and further uplift the travel appeal to rural towns in Peninsular Malaysia.
	Kaimikaua, Charmaine; Salvatore, Liza	<i>Communicating regional identity, empowerment and preserving cultural heritage of sant'elian ciociarian cuisine through slow food tourism</i>	The cultural heritage of food can positively impact environmental sustainability and social integration.
	Clancy, Michael	<i>Slow tourism Ethics, aesthetics and consumptive values</i>	Tourism destinations can tailor their products to the ethical consumer market.
	Le-Klaehn, Diem-Trinh	<i>Slow tourism: experiences and mobilities</i>	Slow tourism is discussed in terms of 'slowness and the value of time; locality and activities at the destination; mode of transport and travel experiences; and environmental consciousness.
2015	Chao, Ren-Fang	<i>Development of slow tourism challenge and operation architecture: a case study on green island, Taiwan</i>	Chao mention in their research that with the involvement of local organizations, internal and external resources can be integrated to have slow tourism present in green island of Taiwan.
	Noor, Farah Atiqah Mohamad; Nair, Vikneswaran; Mura, Paolo	<i>Conceptualizing a Framework for Slow Tourism in a Rural Destination in Malaysia</i>	A 'slow' destination is suggested to be an area where time is cherished. Authors mention that the destinations of slow tourism should be a territory that pays attention to the sustainability and focuses on the local community
2016	Oh, Haemoon; Assaf, A. George; Baloglu, Seyhmus	<i>Motivations and Goals of Slow Tourism</i>	Slow tourism process appears to coexist with fast modes of travel, and they contribute to general tourism experience outcomes.
	Sebova, L'ubica; Marcekova, Radka; Pompurova, Kristina	<i>Slow food philosophy application as a new trend in hospitality facilities</i>	According to authors Slow food links rural pleasures with ethics. New needs demand and desires of customers have led to the emergence of new trends in hospitality like slow tourism. Slow food restaurants are the new requirements of the hospitality guests.
	Raffay, Zoltan; Torocsik, Maria; Gerdesics, Viktoria	<i>Fast and slow tourism - tourism planning on the basis of pace of life</i>	The research focuses on identifying factors that differentiates fast and slow tourism, and on the elements of consumer behaviour and types of communication that must be address when developing new products.
	Oliveira Martins, Uiara Maria; Gurgel, Lorena Ibiapina; de Oliveira Martins, Jose Clerton	<i>Experiences with local food: a case study about Slow Food movement and gastronomic tourism in Recife - Brazil</i>	In this article it is observed the impact of gastronomic itineraries, planned by the Slow Food movement in partnership with a travel agency in the city of Recife (Brazil), on gastronomic tourism development.

	Noor, F. A. Mohamad; Nair, V.; Mura, P.	<i>Towards the conceptualization of a Slow Tourism Theory for a rural destination</i>	The authors try to find similarities between slow tourism and rural tourism in order to propose a definition for slow tourism in a rural destination.
	Pavione, Enrica; Pezzetti, Roberta	<i>The valorisation of "slow territories" through the development of sustainable and experiential tourism</i>	In this article the authors analyse the development of sustainable tourism in "Slow territories" – that are seen to represent a model for local development.
2017	Wilson, Sharon; Hannam, Kevin	<i>The frictions of slow tourism mobilities: Conceptualising campervan travel</i>	In their research authors used a qualitative research to highlight the connection between campervan travel and slow form of tourism mobilities.
	Lee, Kuan-Huei	<i>Slow Food Tourism: Preferences and Behaviours</i>	In this book chapter authors are focusing on describing the psychological characteristics of Slow Food members
	Wang, Dongliang	<i>Tourism Destination Elements Analyses on the Construction of International Slow City of Leshan</i>	The case of Leshan city from China is in the centre of this analysis. There are highlighted the problems of transition of the city to one of destination for tourists taking in consideration the tourism resources, tourism products and the city image.
	Yu, Xiaoli; Li, Ying; Li, Linxi	<i>On the Planning and Design of Jingdezhen as a Center of Tourism Under the Influence of "Slow City" Model</i>	In the centre of this conference paper stay the city of Jingdezhen. The cultural characteristics, that makes Jingdezhen an attractive destination for tourists, and the difficulties of transition for this city to a slow city are analysed taking in consideration the characteristics of Italian slow cities model.
	Gunesch, Konrad	<i>The Ecological and Social Power of Slow Tourism for Sensitive yet Profitable Environmental Sustainability: International Insights for Airline and Business Travel from Intercultural Student and Spiritual Stakeholders</i>	Konrad outlines the fact that slower tourism forms re-orient themselves to incorporate the global travel facilities (including the increasing use of technology), while generating benefits for stakeholders. It is also ben highlighted that fast tourism is adopting many philosophical and practical tenets of slow tourism.
	Feng Xiaohua	<i>On the Development of Slow Tourism in Zhenjiang City</i>	The author is proposing a development strategy, for city of Zhenjiang and others with similar situation, which is focused on slow tourism. Feng makes several suggestions for the transformation of Zhenjiang City in an important destination for tourists in the Yangtze River Delta.
2018	Radogna, Donatella; Viskovic, Alberto	<i>Environmental design, building reclamation and slow tourism for a sustainable development</i>	Within the project "Valore Paese - Cammini e Percorsi" a study on Slow mobility has been made and the result are presented in this conference paper. Among proposals we find recommendation for preserving and securing buildings, for transforming works that include addition and grafting of abandoned resources. The goal for these proposals being to ensure the sustainability and enhancement of local resources.
	Ozdemir, Gokce; Celebi, Duygu	<i>Exploring dimensions of slow tourism motivation</i>	In their study Gokce and Duygu identifies the reasons people choose slow tourism and what segments of tourists are interested in practicing this type of tourism. The main outcome is that this study identified seven tourists' motivational factors for practicing slow tourism (separated in 2 categories: push factors and pull factors).
	Sun, Ya-Yen; Lin, Zhi-Wei	<i>Move fast, travel slow: the influence of high-speed rail on tourism in Taiwan</i>	Sun and Lin examine the influence of high spend rail on travel patterns with focus on Taiwan tourists. The main conclusion of this research was that high speed rail facilitates longer stay at each stop, a deeper connection with locals and a decrease in carbon footprint of travellers, that is in line with the slow travel concept.
	Fistola, Romano; La Rocca, Rosa Anna	<i>Slow Mobility and Cultural Tourism. Walking on Historical Paths</i>	Fistola and La Rocca highlights the fact that slow mobility can be a facilitator for territorial development. They provide a methodology for designing/recovering of historical path, of Via Francigena – Italy, that suits with the principles of slow mobility.
	Pawlusinski, Robert; Kubal, Magdalena	<i>A new take on an old structure? Creative and slow tourism in Krakow (Poland)</i>	Authors outlines the importance of creativity when creating tourist products. The research is split in two parts: one dedicated to traditional tourism (in this case manly for cultural and historical heritage tourism) and one dedicated to new forms of tourism like creative tourism and slow tourism.
2019	Valls, Josep-Francesc; Mota, Luis; Freitas Vieira, Sara Cristina; et al.	<i>Opportunities for Slow Tourism in Madeira</i>	Slow tourism develops when: - the other forms of tourism exploit to intensively a destination generating reduction in sustainability; - newly emerging destinations chose this way of developing; The research done in Madeira revealed that slow tourism can be the result of an endogenous impulse and not a result of over exploitation of one destination.

	Cirjevskis, Andrejs	<i>Designing Organizational Eco-Map to Develop a Customer Value Proposition for a "Slow Tourism" Destination</i>	Slow tourism is seen as integrator for Latvian cultural resources and an infrastructural establishment, in this case Riga Central Market. Latvia promote itself as a slow tourism destination and Cirjevskis identifies in his paper the proper marketing strategies in order to enhance customer satisfaction
	Osorio, Sandra Cherro	<i>A review of slow tourism, food and cities slow tourism, food and cities: Pace and the search for the "Good Life"</i>	Osorio make an analysis of the slow movement with accent on the movement implication on food and tourism destinations. The research identifies that the development of movement forms is in close connection with the crises of modern live, and they are all converging on providing better lifestyle for visitors and residence.
	Losada, Nieves; Mota, Goncalo	<i>Slow down, your movie is too fast': Slow tourism representations in the promotional videos of the Douro region (Northern Portugal)</i>	Losada and Mota explores the presence of the slow tourism attributes in the region of Douro in Portugal and if those attributes are properly use in the region promotional video. Slow tourism is seen as an instrument of better valorification of local resources.
	Bowen, David	<i>Slow Tourism, Food and Cities</i>	In this book Bowen highlights the intertwined connection between slow food, tourism, cities and the continuous search for "the good life".
	Moscarelli, Rossella	<i>Slow tourism infrastructure to enhance the value of cultural heritage in inner areas</i>	In his research Moscarelli point out that cultural heritage can be improved through "slow tourism infrastructure" (such as long - distance and walking paths).
2020	Shang, Wenwen; Qiao, Guanghui; Chen, Nan	<i>Tourist experience of slow tourism: from authenticity to place attachment? a mixed-method study based on the case of slow city in China</i>	Shang, Qiao and Chen underline in their research that authenticity partially influence place attachment and behavioural intention and that the results can be applied to slow tourism marketing.

Source: made by the authors based on the results from Web of Science, showing 44 records for Key word: slow tourism

Taking in consideration the "web of science categories" for the source of articles we discovered that 27 of are included in *Hospitality leisure sport tourism*, follow by *Economics* with 6, *Green sustainable science technology* also 6, *Management* with 5. When we take in consideration the authors for this article, we observe that 4 authors distinguish themselves with research in this field namely: Conway Dennis, Nair Vikneswaran, Mura Paolo, Noor Farah Atiqah Mohamad all with 3 articles.

Another objective of the research was to determine the interest from the research community to the articles indexed on Web of Science (Clarivate analytics). According to the date provided by Web of Science (Clarivate analytics) we found that the most cited article was "Developing a conceptual framework for slow travel: a grounded theory approach" (by Lumsdon, Les M.; McGrath, Peter) with 71 citations'. A total number of 363 citations for all articles until now 1.03.2020.

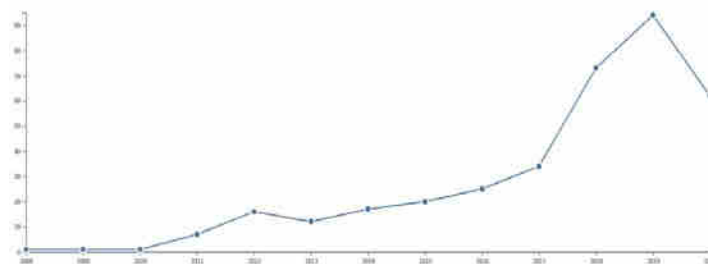


Fig. no. 1 Evolution of the number of citations starting 2008

Source: Web of Science, 2020

As shown in Fig. no. 1 we can see that over the past years slow tourism is starting to generate increasing interest from researchers, with last 2 years been the best for this field of interest. From the date offered by Web of Science we found that the average citations per article is 5.95 with a h-index of 9 (9 articles with at least 9 citations in web of science).

Conclusion

After investigating all the mentioned bibliographic sources, we can say that slow tourism is a new concept, at the beginning of the road one that is taking shape. The researchers don't suggest that it will take the place of mass tourism but comes as a complement to it. The negative effects of mass tourism are known (overcrowding of holiday destinations, stress on the local population, rising prices, the deterioration of tourist attractions, environmental pollution, etc.) and Slow tourism is seen a way to stop or diminish those effects.

We also do not have an exact definition now, but slow tourism is related to the practice of non-polluting forms of slow travel and slow food by using traditional foods instead of fast foods. Many of the articles consider that slow tourism and slow travel are one and the same thing (Dickinson et al., 2011) while others that slow tourism include slow travel (Conway et al., 2012).

In most articles slow tourism is seen playing a beneficial role for local hosts, for environment, for economy and for travelers.

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AN INSIGHT INTO GREEN PRACTICES AND ECO-LABELS IN THE HOTEL INDUSTRY

Maria-Cristina Iorgulescu¹

¹⁾ The Bucharest University of Economic Studies, Romania

E-mail: cristina.iorgulescu@com.ase.ro

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Abstract

As green economy is gaining more and more attention both in the business environment and in terms of public policies, the hotel industry has to align to a series of sustainable development indicators. The article presents a thorough literature review on the green practices implemented in the hotel industry, as well as hotel managers' perception on the possible barriers in implementing the principles of green economy. Furthermore, the paper focuses on the level of implementation of the main eco-labels that may be awarded in the hotel industry, recognized by the Global Sustainable Tourism Council. As officially-certified green hotels represent less than 10% of the accommodation units existing worldwide, the paper offers an interesting starting point for researching the factors that may determine hoteliers to invest in the development of a sustainability management system.

Keywords

green hotels, eco-label, certification, green practices

JEL Classification

Q20, Q50, Z31

Introduction

Environmental impact management has become a necessary practice for tourism companies aiming to maintain their competitive position, this being a way to attract a certain category of customers, but also a source of competitive advantage that allows cost reductions and market differentiation (Singh et al., 2014; Alonso-Almeida et al., 2017; Hsiao et al., 2018; Singjai et al., 2018), an increase in efficiency (Kularatne et al., 2019) and profitability (Geerts, 2014). As it is widely acknowledged that hotels are intensive energy consumers, the paper presents an insight into the main practices that accommodation units may implement in order to increase their energy efficiency and be more sustainable, taking also into consideration the main barriers that hotel managers allege for not adhering to green economy principles. Moreover, the article highlights the most important global Eco-labels or sustainable

certification programs recognized by the Global Sustainable Tourism Council, offering a snapshot of their spread and requirements. The information presented in the paper may be of great use for both hoteliers and academics, as the unprecedented crisis the tourism industry will be facing in 2020 (in the context of the Covid-19 pandemic) may require solutions for cost reductions or gaining new positions on the market and addressing new customer segments.

Literature review on green practices in the hotel industry

Starting from the idea that hotels are among the largest energy consumers in the tertiary sector, Zografakis et al. (2011) argue that renovating initiatives for existing units are financially attractive, paving the way for the implementation of energy saving measures, the exploitation of renewable energy sources and the rational use of energy, all of which are correlated with lower costs and offering more competitive rates on the market. However, recent research (Kularatne et al., 2019) indicates that while a more efficient waste management will directly contribute to financial benefits, reducing water consumption can lead to lower hotel efficiency, given that water is considered to be a particularly important resource for accommodation units, as it is correlated with the comfort of guests and, implicitly, may have future negative effects on demand.

The **reasons behind the implementation of environmental impact management practices** in the hotel industry include (Best and Thapa, 2013): the desire to reduce costs and increase efficiency, internal forces (such as management beliefs and organizational culture) and the pressure of the external environment (compliance with new regulations and customer requests). Ouyang et al. (2019) have demonstrated that the institutional environment has a great influence on hotels, in the sense of implementing management practices in environmental protection. They have proven that hotels are determined to enforce such practices by a number of institutional forces, such as: Government support, industry standards, competitor practices, customer expectations, the local community, and investors. Rahman et al. (2012) have demonstrated through an extensive study that included the U.S. hotel industry that accommodation units affiliated to international hotel chains are more energy efficient compared to independent hotel, as they adopt more frequently green practices. However, their research did not find any significant differences depending on the size of the hotel (considering hotel units with less than 100 rooms or more). Having all these in mind, research shows that the reasons why **hoteliers are still skeptical** about the implementation of technologies that allow the use of renewable energy include (Dascalaki and Balaras, 2004; Karagiorgas et al., 2006): *financial factors* (lack of financial power necessary for investments and uncertainty regarding the return on investment), *lack of human resources* (engineers) with experience in promoting and implementing projects in the field of renewable energy, *lack of specific information* in the field of technologies associated with renewable energy, *lack of feasibility* associated with such projects and the quality of the product created at the end, *the difficulty of integrating energy efficient instruments* in the area where the hotel is located, either for environmental reasons, or for aesthetic reasons or for violating traditional architecture.

Furthermore, the literature highlights the fact that in the process of implementing environmental protection practices in the hotel industry there are a number of **barriers**. Alonso-Almeida et al. (2017), for example, mention internal and external barriers, Hsiao et al. (2018) having a similar approach. *Internal barriers* mainly include a lack of knowledge about the importance of environmental protection strategies (correlated with a lack of understanding and misperception of this topic), financial barriers, management attitude and organizational culture. Regarding the last mentioned barrier, the human resource, through its aversion to change and lack of interest in environmental protection practices, plays a crucial role (Doody, 2010). The attitude of management is correlated with a number of financial

barriers, in the sense that hotel owners or managers are concerned with ensuring short-term profitability, meeting deadlines and projected budgets, given that the development of an environment protection strategy involves a considerable investment of time and money, with long-term results (Doody, 2010). Regarding *external barriers*, Alonso-Almeida et al. (2017) take into account customer skepticism (in the sense that some hoteliers believe that mentioning the ecological practices implemented in the hotel forms a wrong opinion of customers regarding the level of quality of services offered) and elements of legislation and certification (the process of implementing green practices being considered cumbersome). Findings presented in the literature suggest that customer skepticism is a barrier worth considering, as Nimri et al. (2017) also proved that tourists tend to consider that the choice of a green accommodation unit can mean a lower level of comfort, services that do not meet the luxury sector, but which are still sold at high rates.

Dascalaki and Balaras (2004) have developed a methodology (XENIOS) for evaluating the renovation potential of hotel units from the perspective of implementing technologies associated with renewable energy. Within the instrument developed by them, the energy saving measures taken into account by hotels were: installation of solar panels for hot water supply, installation of solar panels for heating swimming pools, production of hot water, solar-based cooling, sea-water cooling, installation of elevator control systems, use of energy-efficient equipment in administrative offices, reduction of energy consumption for lighting in certain areas, use of natural light in certain areas, use of a control system in the room, based on a magnetic key.

Trung and Kumar (2005), Best and Thapa (2013) and Alonso-Almeida et al. (2017) offer many examples of good practices in environmental impact management implemented in hotels. Parpairi (2017) has even made a classification of good green practices that hotels (new or existing) can implement, providing hotel owners or environmental engineers with an action plan designed to contribute to energy conservation and the improvement of the hotel product. Through a rigorous review of the literature, Alonso-Almeida et al. (2017) divide the green practices implemented in the accommodation units into two main categories:

- **basic environmental protection practices:** energy saving practices, water saving practices, waste management (various forms of recycling, reuse of certain items – when possible, „zero paper” programs), reduction of the use of environmentally hazardous cleaning products, training employees on environmental protection measures etc.;
- **advanced environmental protection practices:** solar-fired heating systems, measuring the hotel’s carbon footprint, providing employee training programs on environmental issues, rewarding employees who take environmental initiatives, environmental concerns in marketing campaigns, the existence of a long-term orientation regarding environmental protection, quantification of costs and savings in terms of energy consumption, implementation of an environmental protection management system, participation in global environmental protection activities, the existence of charging stations for electric cars, the creation of green products, the use of rainwater and other natural resources, the adaptation of the operating program to streamline the consumption of water and electricity, the use of recycled water for irrigation, use of solar panels, use of water from wells, ecological washing and drying of the textile inventory etc.

The need to implement green practices in the hotel industry can be correlated with the fact that recent studies (Kim et al., 2016; Wang et al., 2018; Merli et al., 2019) indicate a correlation between the care of the environment proven by hotels, customer satisfaction and customer loyalty. Merli et al. (2019) have shown through a study including hotels in Italy that accommodation units should make more efforts to promote their commitment and care for sustainable practices, and the existence of an eco-certification should be clearly communicated to guests, as these initiatives increase the availability of tourists to return to the same accommodation unit and to recommend it to the circle of friends and acquaintances.

In recommending and promoting green hotels, millennials and women have the greatest influence (Wang et al., 2018), but middle-aged people and men are more likely to pay a higher rate to stay in a green hotel (Kostakis and Sardianou, 2012). Moreover, Nimri et al. (2017) show that in attracting guests to green hotels, personal beliefs are less important, the decision to choose such an accommodation unit being strongly influenced by the belief that it thus contributes to caring for the environment. Similar conclusions were reached by Bashir et al. (2019).

The development of Eco-labels and sustainable certification programs in the hotel industry

The interest in developing sustainable or green practices in the hotel industry has been rising in the past 25 years, as around the world there have been developed several Eco-labels or sustainable certification programs that guide hospitality organizations to improve their activity and lower their impact on the environment. The level of development in this regard is escalating, as some sources (International Tourism Partnership and Green Hotelier, 2016) mention more than 140 Eco-labels worldwide, for the hotel industry, while other sources (Holiabie, 2019) estimate there could be even more than 200 of them, developed in different regions or countries, around the globe.

Since it is impossible to present all Eco-labels available worldwide, it is at least interesting to summarize the ones spread at international level, covering the highest number of hotels certified (Table no. 1). This will offer hoteliers and academics an overview on the practices and activity sectors that are “greened” in order to be awarded with the eco/sustainable/green certification. The standards to comply with are established by the Global Sustainable Tourism Council (GSTC, 2020), and in this regard the present paper focuses only on the eight certification programs (out of a total of 30) recognized by GSTC and developed at international/global level, not just at national/regional level: Biosphere Responsible Tourism, Earth Check, Green Globe, Green Growth 2050, Green Key, Green Tourism Active, Hilton LightStay, Travelife Standard for Hotels and Accommodations. All these Eco-labels and certification programs need to address the GSTC criteria imposed for the hotel industry, a snapshot of main issues to be solved being presented in Figure no. 1.

Effective sustainable management	Maximized social and economic benefits to the local community and minimized negative impacts	Maximized benefits to cultural heritage and minimized negative impacts	Maximized benefits to the environment and minimized negative impacts
• Sustainability management system • Legal compliance • Reporting and communication on sustainability policy • Staff engagement • Customer satisfaction • Accurate promotion • Buildings and infrastructure • Land water and property rights • Information and interpretation • Destination engagement	• Community support • Local employment • Local purchasing • Local entrepreneurs • Exploitation and harassment • Equal opportunity • Decent work • Community services • Local livelihoods	• Cultural interactions • Protecting cultural heritage • Presenting culture and heritage • Artefacts	• Conserving resources • Reducing pollution • Conserving biodiversity, ecosystems and landscapes

Fig. no. 1 GSTC criteria for the hotel industry

Source: created by the author, based on GSTC, 2016

The GSTC criteria, focusing on 4 main objectives, mainly address issues tackled by a series of eco-labels reviewed by Teng et al. (2012) in their research. The development of the green hotels' market is still in its beginnings, as a study conducted five years ago by the website

GreenHotelWorld.com (cited by International Tourism Partnership and Green Hotelier, 2016) highlighted that only 6.2% of the hotels in the world have applied and have been awarded with an Eco-label or a sustainable certification, the continent with the highest ratio of officially recognized “green hotels” being North America (with 10.1% of the total accommodation units), followed by Europe (6.1%), the continent with the lowest density in this regard being Asia (0.9%).

Table no. 1 Main global Eco-labels and certification programs recognized by GSTC

Certification program	Assessment and criteria	Number of business certified	Region of implementation
	External audit, checking the compliance with the 17 sustainable development goals (STD) imposed by the United Nations, covering 5 main sectors: climate change, environment, social, economy and culture	n.d.*, covering mainly hotels in North and Central America, Portugal and Spain	Developed in 1995, in Spain
	Independent audit, checking 10 benchmarking indicators	482 accommodation units	Developed in 1987 in Australia, it has been adopted as a recognized standard of Marriott International
	Independent audit, checking 44 core criteria, covering more than 380 indicators that are renewed twice every year	More than 500 business units, in 83 countries, on 5 continents	Developed in 1994 and located in Los Angeles (U.S.A.)
	Independent audit, checking more than 400 corporate social responsibility and sustainability indicators	n.d.	Brisbane (Australia)
	On-site audits, checking 13 categories, covering 130 criteria	3200 business units, in 65 countries	Developed in 1994 in Copenhagen (Denmark)
	Online assessment, checking GSTC and ISO 50001, 90001, 140001, 26000 standards	More than 130 business units	Cape Town, South Africa
	It is an environmental and energy management system, respecting the GSTC and ISO 14001, 50001 standards	Implemented at every Hilton unit worldwide, for more than 4600 business units in 120 countries	Developed in 2008 by Hilton Worldwide, U.S.A.
	Independent audit, checking several criteria adopted by GSTC	1300 hotel members, worldwide; the number of certified business units is not determined	London, U.K.

*n.d. – not determined

Source: created by the author, based on the official websites of each certification program

Most of the global Eco-labels recognized by GSTC and presented in Table no. 1 are awarded by foundations or non-profit organizations, based on third-party independent audits. While Green Key is the most widespread eco-label, the most interesting case is the one of Hilton Light Stay certification, which is a private corporate responsibility performance measurement instrument, the first one to be recognized by GSTC in the case of a large hotel group. Teng et al. (2012) and Baicu et al. (2019) noted that more and more hotel managers are aware of the importance of the industry's focus on the green hotels' development, authors emphasizing that green hotel programs provide considerable support through international experience in developing energy conservation and carbon footprint practices. In this regard, Teng et al. (2012) have carried out a centralization and analysis of the main eco-certification programs for the hotel industry, concluding that despite the existence of differences in the standards used by each program, there are a number of common evaluation criteria, which include: energy and water conservation measures and waste management. The other evaluation criteria include: corporate management regarding environmental protection, staff involvement, guest information, quality of hotel interiors, use of hazardous substances, social involvement and communication, procurement policies, transport, public catering. These being said, it is expected for the eco-labeling sector to keep attracting adherents.

Conclusions

As the interest in green economy and sustainability principles is increasing worldwide, hotels need to be able to identify and implement practices and measures for improving their energy efficiency. In this regard, the paper has presented an insight into the green practices hotels may implement, as well as the barriers and advantages of investing in environmental impact management. Considering the unprecedented crisis the tourism industry is facing in 2020 due to the Covid-19 pandemic, the World Economic Forum (2020) argues that business around the globe could shift more rapidly to implementing green practices. The hotel industry itself should innovate in this sector in order to survive, with the help of academia (Pamfilie et al., 2014), policy makers and non-profit organizations with international experience in implementing the green economy principles.

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PERCEPTION ON A CAREER IN TOURISM: THE CASE OF BUSINESS AND TOURISM STUDENTS

Maria-Cristina Iorgulescu¹, Olimpia State² and Mihail Ovidiu Tănase³

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

E-mail: cristina.iorgulescu@com.ase.ro; E-mail: state.olimpia@com.ase.ro;

E-mail: mihail.tanase@com.ase.ro

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Abstract

It is well known that tourism is a labor intensive industry. Due to the specifics of the activity, most of the jobs available in tourism are addressed to young people at the beginning of their career. For these reasons, it is very important to know their perception on this field of activity and on a future career in tourism considering the impact of specialized university studies and the skills required by the industry. By using a structured questionnaire, a survey was conducted for two consecutive years. The respondents were second-year students enrolled at the Faculty of Business and Tourism from the Bucharest University of Economic Studies (BUES). Having a 70.04% response rate from sophomore students, the research shows that the respondents are not very eager to work in the tourism industry. For those who want to develop a career in tourism, travel agencies and hotels are the first options. Main motives for not choosing a career in tourism are: personal interest for another domain, lower salary at entry-level, and family opinion about the industry. For the students involved in the study, the strongest characteristics of a career in tourism is the working environment defined as challenging and interesting and the benefits of constant learning and development. The present paper shows relevant directions for human resource managers in the industry, as students and fresh graduates are the main options for the positions at the base of the organizational chart.

Keywords

education, tourism, career, skills, student perception, satisfaction

JEL Classification

A22, I23, J81, L83

Introduction

Several studies (Freeland, 2000; Brien, 2004; Baum, 2006) have identified a series of characteristics for Hospitality and Tourism Industry (HT) jobs: increased levels of staff

turnover, low skilled jobs, high levels of female workers, working in shifts, poor utilization of students labor, part-time jobs. A cross-national study (Kim et. al, 2016) covering students living in three Asian countries (Taiwan, South Korea and Hong Kong) shows that entry level positions, working conditions and welfare associated to these jobs are a barrier in selecting to work in the HT industry. As reasons for choosing a career in the HT industry, the first ones would be: personal interest, opportunities and job environment. For reasons not to choose a career this industry the study revealed: the unstable job environment, poor job opportunities and low personal interest. Moreover, Brown et al. (2015) consider that the most important aspect for choosing a career in the HT industry for the employees belonging to Generation Y is the possibility to work with people from all over the world.

Another study (Richardson and Thomas, 2012) shows that students in the U.S. mark as very important the following factors for their future career: enjoyable job (81.4%), working environment (67.8%), job security (63.2%), promotion prospects (63.2%) and level of earnings over entire career (61.6%). The same study also shows that there is a gap between students' expectations and their perceptions about the HT industry, as they generally do not believe that the desired factors can be found in the jobs offered by the HT industry. Similar results were recorded for Australian students (Richardson, 2009), where undergraduate students who were not studying tourism believe that the HT industry does not provide the attributes they consider important for a future career.

In the Business and Tourism Faculty (BT) there is no clear major, at undergraduate level, for studies in hospitality and tourism (HT). The field of studies comprises both tourism and business courses. A clear choice can be made at master's studies, where students can select from two specialized tourism programs. When talking about majors at undergraduate level, domains like experimental sciences and health sciences are more valued than social sciences. In this field, HT studies are less valued by students and society than other related areas of knowledge (Airey et al., 2015).

In terms of motivations for choosing a university degree in social sciences, several studies (Guzmán and Martínez, 2012; López-Bonilla et al., 2012; Ali and Tinggi, 2013) present similar results: prestige, family and friends' advice, personal interest, lifestyle, job opportunities and working environment, admission scores. In their paper, Juaneda et al. (2012) show that motivations related to job prospects are on the first place followed by personal skills and interest in the degree; third place is occupied by reputation of the degree and job prestige. Their paper reveals that women have a higher preference for HT studies, academic performance decreases the preferences for HT studies and parents' education is not a decisive factor in the students' choice process. For Asia, a study developed by Lu and Adler (2009) reveals the undergraduate students' preferences for a future career in several fields of the hospitality industry. The hotel sector was the most interesting one (54.4%), followed by travel agencies (22.7%), conventions/events (11.3%) and tourism attractions (5.8%). Food and beverage and tourism education account for 3.2% and 2.6%.

The present paper focuses on the factors that students believe to be important in order to choose a major in business and tourism, their satisfaction after 2 years of college and plans for a future master degree. It also takes into consideration their willingness to follow a career in the HT industry, the abilities required and the degree of correlation with the curricula. Their perception on HT jobs is very important as a first step for a career in this field. Understanding students' motivations and perceptions is relevant for several stakeholders: the industry (as nowadays students may be their future employees), managers (it could help them to attract skilled staff and reduce staff turnover), universities (attracting high quality students), future and current students (to reduce cognitive dissonance related to HT jobs and industry).

Methodology

The main aim of the research was to identify students' perception on the usefulness of their future college degree for their professional life, as well as their perception on the characteristics of a career in the tourism industry, together with the impact of education in setting the ground for such a career. As a result, the specific objectives of the study were: **O1:** to identify students' level of satisfaction with the faculty they are attending and the reasons for applying to the faculty; **O2:** to determine students' perception on the importance and impact of a bachelor degree in developing a career in the tourism industry; **O3:** to identify students' willingness of developing a career in the tourism industry; **O4:** to determine students' perception on the characteristics of working in the tourism industry. This being said, the authors considered suitable to conduct an exploratory research (a survey based on a structured questionnaire) among sophomore students of the Faculty of Business and Tourism (the Bucharest University of Economic Studies), during two consecutive academic years: 2017-2018 and 2018-2019. The research was developed at the end of each academic year, via an online questionnaire posted on the isondaje.ro platform, targeting all second-year students enrolled at the faculty. The research instrument was designed with 14 closed questions (structured questions, with a total of 42 items to be answered) and 2 identification items (aimed at establishing the respondent's sex and study group they belong to). Out of the 741 students enrolled in the sophomore year at the Faculty of Business and Tourism for the two academic years taken into account, 519 completed the questionnaire, resulting in a 70.04% response rate. Although the sample cannot be considered representative for all the students enrolled in an economic college, the results offer a valuable insight into the undergraduates' perception on education and a career in tourism, based on a study conducted in the most important economic higher education institution in Romania.

Results and discussion

After centralizing all responses, interesting results have been highlighted, as presented in the following section. Out of the 519 interviewed students, 72.6% were female and 27.4% were male. First of all, addressing **the first objective of the research**, regarding the reason why students have chosen to study at the Faculty of Business and Tourism, most of them – 48.4% stated that they considered this program will offer them the information required for a successful career, while 18.9% mentioned the faculty was recommended to them by an alumni, 11% stated that graduating this college would enable them to easily find a job. Some students (6.4%) stated that they have chosen the college to simply earn a diploma, 3.9% of the respondents considered that graduating from this faculty would offer them a salary increase, 2.5% of the interviewed students have chosen this faculty at their parents' insistence, while the remaining 9.1% had different motives. It is worth mentioning that for 42.4% of the respondents, none of their parents have a college degree, while for a quarter (25.6%) only one of the parents is highly educated, and only for a third (32.2%) both parents have at least a college degree.

These being said, after studying for two years at the Faculty of Business and Tourism, the respondents are satisfied with the academic decision they have taken (average score of 3.86 on a scale of 1-5, 1 being "very dissatisfied" and 5 – "very satisfied"), as 75.9% of them declared to be (very) happy with their choice, only 3.9% stating to be (very) dissatisfied. These results are confirmed and strengthened by the fact that if they were to apply again for college, 60.1% of the interviewed students would still choose The Bucharest University of Economic Studies – the Faculty of Business and Tourism, while 17.5% would apply for the same university, but on a different faculty. An interesting result comes from the fact that 20.4% of the respondents would choose another university, probably because the major does not suit their abilities and passion, while 1.9% (10 students) stated they would no longer apply for college. Moreover, in case of those who have applied at this specific faculty at their family

insistence, only 2 persons declared to be dissatisfied with the decision taken, both of them stating that they would now choose to apply for a different faculty or a different university. The next section of the questionnaire was related to **the second objective of the research**. This being said, when asked whether for developing a career in tourism an academic degree (bachelor or master) is necessary, 82.2% of the respondents (strongly) agreed (average score of 4.07 on a scale of 1-5, 1 being “strongly disagree” and 5 – “strongly agree”), only 3.5% of the interviewed students disagreeing with this statement. For evaluating the extent to which graduating from the Faculty of Business and Tourism contributes to developing the skills required for a career in tourism, 16 skills have been taken into account, the results being presented in figure 1.



Fig. no. 1 The level of skills development after graduating from the Faculty of Business and Tourism

Students were asked to evaluate the future impact of graduating from the faculty they are attending on developing each of the 16 skills taken into account on a 7-point scale (1 – “to a very little extent”, 7 – “to a very large extent”), the average scores for all the responses being presented in figure 1. As easily observed, all the skills have been evaluated with scores higher than 4.5, meaning that the interviewed students consider that earning their bachelor degree will help them develop a complete set of skills needed to work in the tourism industry. However, the respondents perceive that during college they learn the most to be results-oriented (score 5.56), as they develop their ability to make decisions on their own (score 5.24) and to be very good organized (score 5.2). The results are interesting as they also highlight that the skills that are least developed during college are problem solving (score 4.701) and creativity (score 4.703). This may be explained by the fact that in the first two years of college, students have in the curriculum basic disciplines, such as micro- and macroeconomics, mathematics, accounting, statistics or econometrics, all requiring logical thinking, while disciplines that strongly require their creativity, such as business ethics, promotional techniques or design and aesthetics are included in the curricula in their senior year of college. In terms of the students’ interest in developing a career in tourism (**objective no. 3**), the respondents are, in general, only somehow aiming to develop their professional life in this sector (average score of 3.43, on a 7-point scale, 1 – “to a very little extent”, 7 – “to a very large extent”), as only 40.6% declared to be very interested and determined to choose the tourism industry as their career path. For those respondents who declared themselves to be

willing to work in tourism, the specific industry sector they find appealing is presented in figure no. 2.

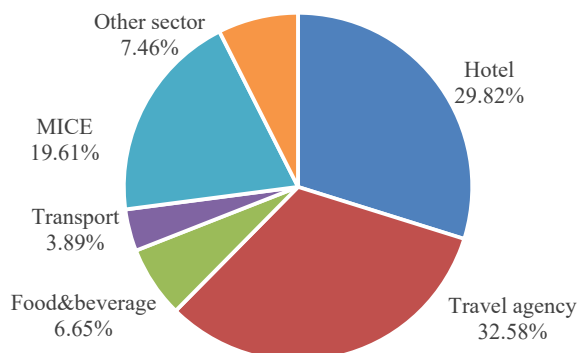


Fig. no. 2 Tourism industry sectors students are interested in developing a career

Most of the respondents (32.58%) stated that they consider working in a travel agency, the hotel industry being in their top choices as well (for 29.82% of cases), followed by the MICE (meetings, incentives, conferences, exhibitions) industry (for 19.61% of cases). The least preferred sectors of the industry to work in would be transportation and food and beverage. Moreover, in order to identify the reasons why students state that developing a career in tourism is not an option for them, the respondents were asked to state their reasons behind such a decision, the results being highlighted in figure no. 3.

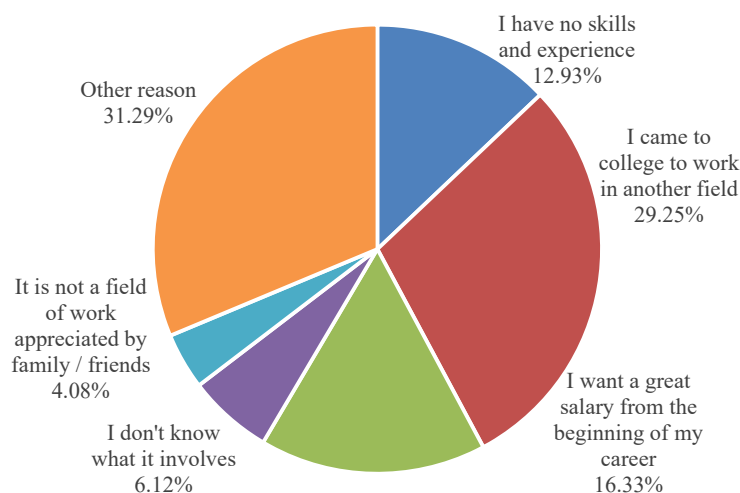


Fig. no. 3 Students' reasons for not choosing the tourism industry as a possible career path

Most of those who do not consider tourism as a career path (29.25%) state that their motives are rather simple, as from starting college they have wanted to work in a different sector. Another reason for not choosing to develop a professional life in tourism is the desire to obtain a great salary on an entry-level (in 16.33% of cases), while 12.93% of the respondents state they feel they do not have the skills or experience required for such a career path.

Regarding the **fourth objective of the research**, the next section of the questionnaire was aimed at identifying students' perception on the characteristics of a career in tourism, by taking into account 13 statements that the respondents were asked to evaluate on a 7-point scale (1 – “in a very little extent”, 7 – “in a very large extent”), the average general scores being presented in table no. 1.

Table no. 1 Students' perception on the characteristics of a career in tourism

Characteristic	Average score
To work in an interesting field that will permanently challenge me	5.70327
Working in an area that involves business traveling	5.65895
Working in an area that involves continuous learning and development	5.52793
I work in the field in which I have a degree	5.50481
Working in an area that gives me mobility in career development (transfer to another city / another country)	5.41181
To have a job that will allow me time for personal and family life	5.34104
Working in a respected field in society / family	5.33526
I have promotion opportunities	5.3314
Good working conditions	5.29094
To have the opportunity to work on a flexible schedule	5.25048
I can achieve large salary increases as my career progresses	5.1368
Job security	4.79576
I can get a great salary from the beginning of my career	3.81502

As easily observed in the table above, the respondents agreed with 11 of the 13 statements regarding the aspects of working in tourism (with general average score higher than 5), the strongest characteristics of a career in this industry being that it is a challenging and interesting working environment, that requires constant learning and development. On the opposite, students rather do not trust the opportunities of earning a great salary right from the beginning of their career, which is actually in accordance with the real labor market conditions in the tourism industry and probably one of the reasons why young professionals tend to be more attracted to work in other business sectors.

Conclusions

The present paper provides an insight on the students' opinions about a career in the tourism industry. Starting from the need for a university degree and the skills developed during college, the paper also evaluates the intentions of building a future career in tourism. The paper highlights the main poles of attraction of the industry (travel agencies and hotels), but also the deterrent factors in this regards (interest in another field of activity, low income for entry-level jobs, lack of experience and necessary skills). Overall, the tourism industry is perceived in a positive note among students (with an average score around 5 out of 7), the only characteristics with a slightly negative evaluation being the opportunities of earning a great salary right from the beginning of the career and job security. Due to recent realities (COVID-19 crisis) and the fact the tourism industry is heavily affected at present times, future studies are required to identify the impact over the general labor market, with a focus on tourism. Students' perception is very important, since they are the ones filling the positions that are labor intensive. A transversal study is intended to be conducted to see if this crisis

affects students' perception over education and skills for a career in tourism. Last, but not least, as hotels in Romania seem to be already presenting an interest in green economy and sustainable practices (Pamfilie et al., 2018; Baicu et al., 2019), the recovery from the 2020 unprecedented crisis could mean a shift towards the principles of green economy, including green jobs in the tourism industry.

Acknowledgement

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STATISTICAL TECHNIQUES FOR ANALYZING THE IMPACT OF THE MACROECONOMIC DETERMINANTS OF FOREIGN TOURISM DEMANDS IN ROMANIA

Calcedonia Enache¹, Sonia Budz², Mirela-Octavia Sîrbu³ and Daniel Zgură⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: calcedoniaenache@yahoo.com; E-mail: sonia.budz@yahoo.com;

E-mail: sirbu.mirela@com.ase.ro; E-mail: daniel.zgura@gmail.com

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Abstract

Nowadays, technology is the prime element worldwide, used on a daily basis to ease and improve companies and individuals' lives. The evolution of technology conducted to the apparition of new economic branches and business models, such as the sharing economy. These models led to the progress of the online infrastructure, which stimulates a better interaction between providers and consumers, improving the level of quality with regards to services and products. One of the pioneers in this domain is the giant Airbnb which activates in the tourism field on a global level, being implicated in the economic transition.

The scope of this paper is to analyze the impact of the macroeconomic determinants of the foreign tourism demands in Romania, using the linear panel regression model. The analysis was performed on annual panel data corresponding to a number of 23 EU member states. According to the obtained results, during the interval 2012-2018, an increase of 1% in relative costs of living of tourists lead to a subsequent decrease of 1.45% in nights spent by foreign tourists in holiday and other short-stay accommodation units.

This study is useful for all legal entities, entrepreneurs and individuals involved in the tourism field for their business strategies with regards to the quality of services that generates economical growth.

Keywords

International tourism demand, Sharing Economy, Airbnb, technology, economic growth, Panel data, tourism intensity

JEL Classification

C51, M21, O33, Z32

Introduction

The World Tourism Organization, says "tourism covers the activities of a person who travels outside her/ his ordinary environment for less than a specified period of time and whose purpose is other than exert of a paid activity at the place of visit." (Neguț et al., 2006). Simultaneously, the importance of the tourism activity and the need for its sustainable development are underlined by the latest statistical data provided by the World Tourism Organization. Thus, in 2017, one in ten jobs belonged to the tourist sector and 10% of the gross global product was created in the field of tourism. As well, tourism was accounted for 7% of the global exports and 30% of the global services' exports, in the same year.

For many economies, the tourism industry bears a particular significance, not only through the income generated, but also as a supplier of jobs, currency flows, entrepreneurial dynamism, and contributor to regional development (Țigu, 2012, cited in Bădulescu et. al, 2018).

A significant image on the importance of this sector of activity in Romania is reflected by the evolution in the period of 2012-2018, with regards to the number of bed places offered by the holiday and other short stay accommodation units, the number of nights spent in these units, the number of overnight stays of Romanian tourists in these units and the total overnight stays, in terms of the degree of urbanization.

Thereby, in Romania, during the interval of 2012-2018, the number of holiday and other short stay accommodation units grew gradually from 2,861 to 4,661. In fact, in 2018, the number of bed places offered by the holiday and other short stay accommodation units amounted to 110,405. In comparison with other EU member countries, this indicator has recorded a lower level than the one reached in Poland (399,996), in the Czech Republic (175,552) and in Hungary (145,346), but higher than the one obtained in Lithuania (55,551), Bulgaria (48,704) or Estonia (27,001).

In addition, between 2012 and 2018, the number of nights spent in holiday and other short-stay accommodation recorded an average annual dynamics of 13.14 %, reaching 4,883,220. It should be noted that, along with Romania, only four countries of the EU-27 group reported an average annual growth rates of the above-mentioned indicator over 10%, namely Portugal (47.1 %, up to 8,866,275), Malta (12.26%, up to la 311,778), Greece (11.75%, up to 31,517,741) and Latvia (10.5 %, up to la 993,379). In the case of holiday and other short stay accommodation units, the number of overnight stays of Romanian tourists increased from 2,107,931 in 2012 to 4,457,104 in 2018. In contrast, the number of overnight stays of foreign tourists increased from 220,478 in 2012 to 441,696 in 2017, then down to 426,116 in 2018. Moreover, around 71 % of nights spent by non-residents in 2018 were by tourists coming from Hungary (25.45 %), Germany (16.67 %), Italy (7.19 %), France (4.92 %), Poland (4.2 %), United Kingdom (3.43%), Spain (2.85 %), Austria (2.51%), Netherlands (2.21 %) and Czechia (1.66 %). On the other hand, during the interval 2012-2018, in terms of the degree of urbanization, 49.21 % of the total overnight stays in holiday and other short stay accommodation were registered in rural areas, 27.58 % in towns and suburbs and 23.21 % in cities. In 2018, most trips registered in holiday and other short stay accommodation structures were between 4 and 7 nights (43.99 %, up 5.04 percentage points than in 2012), followed by those between 1 and 3 nights (33.75 %, up 6.22 percentage points) and those between 8 and 14 nights (13.89 %, down 3.6 percentage points). Concerning the tourism intensity, in 2017, according to data from UNWTO, Romania reported an average of 3.16 arrivals per inhabitant. Compared to the EU-10 countries, the level was higher than the one recorded in Hungary (3.1 arrivals per inhabitant), Slovenia (2.6 arrivals per inhabitant), Latvia (2.51 arrivals per inhabitant), Bulgaria (1.92 arrivals per inhabitant), Lithuania (1.75 arrivals per inhabitant) and Poland (1.68 arrivals per inhabitant). In the last decades, the connection between tourism

and the economic growth is noticeable and has generated a significant number of studies and articles. In this circumstances, the present study aims to investigate the impact of the macroeconomic determinants of foreign tourism demand in Romania, during the interval 2012-2018.

Material and method

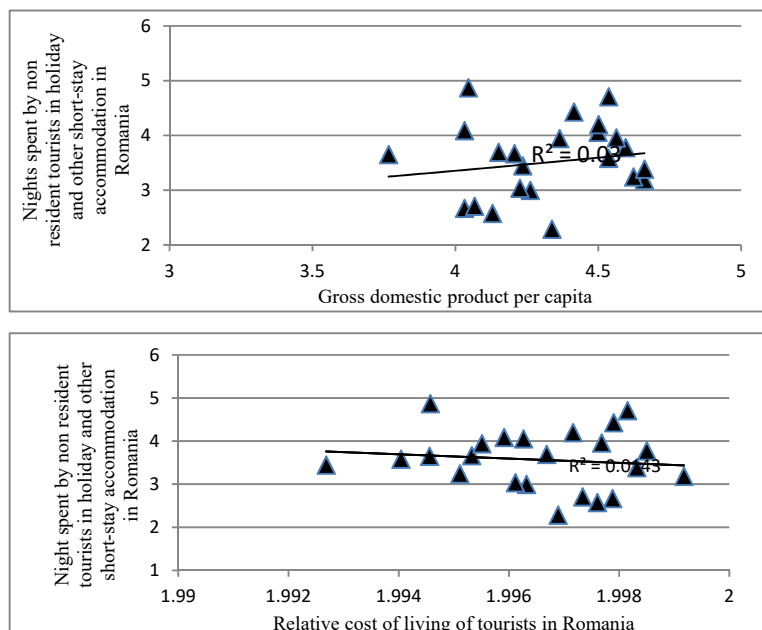
"The literature regarding the relation between tourism and economic growth is relatively recent, due to most classical theories (either neoclassical or endogenous growth theories) lacking references to tourism and its role in the economic growth" (Bădulescu et. al, 2018). In this context, the present study analyses the relationship between the tourism demand, economic growth, tourism price and information technology, using the linear panel regression model, similar to the one described by Baltagi (2005) and Greene (2008).

The variables considered are the following:

- Nights spent by tourists in holiday and other short-stay accommodation from origin country i to Romania at time t . Source: EUROSTAT
- Gross domestic product per capita of sending country i at time t , average prices of 2010. Source: EUROSTAT
- Relative cost of living of tourists in Romania at time t , calculated as ratio of the consumer price index of Romania at time t and the consumer price index of origin country i at time t . Source: Own calculations based on EUROSTAT data
- Purchases travel and holiday accommodation over the Internet in each of the origin country i at time t (percentage of individuals). Source: EUROSTAT

The series of data have an annual frequency and cover the period 2012-2018. All series were expressed in natural logarithms (Enache, 2015), being denoted by NST, GDPP, RLCT, and PHTA.

First, we selected EU-15 countries. We also considered the 10 countries that joined the EU in 2004, plus Bulgaria. Following the analyses, respectively estimating the model for the whole group of countries, we noticed that the results are sensitive to the inclusion of Malta, Finland and Luxembourg in the sample. For this reason, the respective countries were eliminated. Next, we determined the cross-country relationships taking into account the average values recorded at the level of each country included in the analysis.



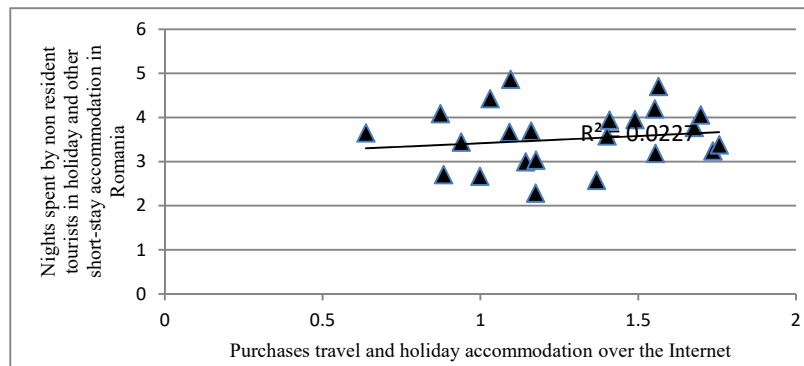


Fig. no. 1 Cross country relationship – average values at country level, 2012-2018

As can be seen in figure no. 1, the relationships derived at the theoretical level are confirmed by this analysis. The next step was to estimate a Fixed Effects Panel model.

Model estimation and results

The four variables have been tested to detect the presence of unit roots, applying the following tests: Levin, Lin and Chu (Levin et al., 2002), ADF – Fischer chi-square (Dickey et al., 1979), Im, Pesaran and Shin W-stat (Im et al., 2003) and the PP – Fischer chi-square (PP) (Phillips and Perron, 1988).

Table no. 1. Results of panel unit root test

Unit Root Test		Levin, Lin & Chu	Im, Pesaran and Shin W-stat	ADF - Fisher Chi-square	PP - Fisher Chi-square
		H ₀ : Unit root (common unit root process)	H ₀ : Unit root (individual unit root process)		
Level	NST	-6.59610*	-0.47311	49.9146	55.8288
	GDPP	4.18147	7.47481	6.50202	11.5440
	RCLT	-10.0533*	-2.90467*	83.7295*	92.8249*
	PHTA	-2.59488*	1.24019	32.5931	40.5897
First difference	NST	-18.1904*	-4.64096*	105.238*	119.065*
	GDPP	-12.2190*	-3.01471*	87.5740*	126.066*
	RCLT	-13.4555*	-3.53119*	80.4068*	86.6549*
	PHTA	-16.7128*	-4.67548*	106.401*	113.112*

*The null hypothesis is rejected at a significance level of 1%

The results of the stationarity tests, reported in Table no. 1, indicate that the RCLT is integrated of order zero, whereas GDPP, RCLT and PHTA will be stationary after first order differencing.

Next, we used the Hausman test (Hausman, 1978) in order to identify which of the models is more adequate: the fixed effects or the random effects one (Table no. 2). As the probability obtained was 0.0, thus the first model is more appropriate.

Table no. 2. Results of Hausman test

Variable	Fixed	Random	Var (Diff.)	Prob.
GDPP	2.771176	1.832885	0.064743	0.0002
RCLT	0.386808	0.464849	0.000674	0.0026
PHTA	-0.954705	-0.755787	0.002863	0.0002

$$\text{Chi}^2 (3) = 14.632042; \text{Prob} > \text{chi}^2 = 0.0022$$

Further on, we applied the least squares technique to estimate the panel data model. Table no. 3 contains the results of the estimation.

Table no. 3. Panel fixed effects model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDPP	3.218798	0.351453	9.158536	0.0000
RCLT	-1.447318	0.538663	-2.686873	0.0081
PHTA	0.415463	0.083315	4.986643	0.0000
C	-18.42132	4.191026	-4.395419	0.0000
R-squared	0.988754			
F-statistic	471.2484			
Prob. (F-statistic)	0.000000			
Durbin-Watson stat	1.708998			

Discussion

The estimation results of the Fixed Effect Panel indicate the existence of a direct relation between NST and GDPP and between NST and PHTA respectively, as well as an inverse relation between NST and RCLT.

Vasiliu et al. (2016) mentioned that “consumers gain the information they need to make decisions about buying products by looking for information in an attempt to decide what, when and from whom to buy. Consumers frequently engage in online search processes to extract current and relevant information for their purchasing decisions, with the Internet becoming one of the most interactive tools that influence users' decisions in the context of shopping. Searching for product information online is an essential part of the decision taking and purchasing comparison process, as it reduces the uncertainty of the purchase and increases the likelihood of satisfaction with regards to the purchase made.”

Today, social media is by far the number one reputation management channel. Social media is also a big forum where users can share their personal experiences by posting comments and reviews that may influence the decision of other customers and could easily improve the quality of the provided services.

Onete et al. (2013) said that “the providers of products and services cannot maintain their economic activities if they cannot identify as accurately as possible the needs and preferences of those purchasing the products and services. These ones can be individual consumers as well as other business organizations. In this process of identifying needs and preferences, social media can play a very important role. Social media provides a series of tools through the agency of which producers can analyze the needs from the market and can determine the costumers' expectations. At the same time, they can find out faster if the products and services they provide meet their clients' expectations. Social media and the internet in general allow gathering almost fully complete information before purchasing a certain product or service.

The consumer can read all the existing information about the product or service he is about to purchase, can compare the offers of different sellers/ distributors and can evaluate the information obtained in this environment with the information from traditional media or from personal experience.”

The development of technologies motivated small entrepreneurs to rethink how they maintain and develop their relationship with the customers. It is not enough to offer the best value to the clients, but also stability, sustainability, because of the competition and care of the environment. When buying a product or service, customers are influenced by feelings and perceptions as well, not just by reasoning and costs. Most of them are tired of standardized services, for example.

Due to the 2008 crisis, the demands for sustainable alternatives increased. The emergence of new ideas and pioneers in changing the world with its old paradigms took place.

As a result in Europe, Amsterdam was the first European “sharing city” back in 2010.

The sharing economy is the act of collaboratively usage of underutilized inventory through cost-sharing. Airbnb was one of the pioneers in this industry and it was founded in 2008 in the U.S.A., having an available platform in more than 200 countries in the world. The company recorded a massive growth since it started, in 2015 having nearly 17 million total guests who stayed with Airbnb hosts around the world. (Airbnb Summer Travel Report, 2015) It is a trendy site among European tourists, working just like any other sharing business. It is an intermediary platform for tourists and accommodation providers.

The whole system works based on reviews. Both the hosts and the tourists receive a review after each transaction.

The advantages of Airbnb for are the lower prices in comparison with hotels, the comfort especially for big groups, thus good price quality ratio and the reducing of holiday costs by putting the kitchen at tourists’ disposal.

The disadvantages of Airbnb are no concierge services, no breakfast, lack of intimacy if the “entire place” is not chosen, the host rules with regards to the check-in and check-out, the payment at the time of confirmation, the strict cancellation policy (Zervas et al., 2016).

In Romania, it's relatively new and most people who rent accommodation establishments on Airbnb have been doing this just for few years. But more and more people are open to this because of the opportunity given to small entrepreneurs to develop and balance the economy. The main reasons tourists prefer Airbnb apartments is the lower costs, the good comfort, the increased feeling of “home” and the opportunity to empathize with the locals.

Usually the younger people choose Airbnb due to their lower income, or tourists that do not consider the accommodation very important.

As known, the private sector is the largest component of the GDP representing household expenditures as the act of renting, for example. Home sharing and the whole tourism industry have a great impact on the GDP, Airbnb guests stay longer and spend more money in diverse neighborhoods throughout the city.

Conclusions

According to the analysis above, the relationship between the tourism demands, economic growth, tourism prices and information technology is very important. The tourism in Romania, in this case the number of nights spent at tourists accommodations, increased in the mentioned period due to the GDP/Capita and online purchases. The development of technology, the need of more sustainability, the demands regarding tourism led to an infrastructure growth and improvement, resulting in the emergence of online platforms as Airbnb.

Although European travelers have bigger incomes in comparison with Romanians, they prefer renting private apartments due to the degree of familiarity and flexibility. Usually families or big groups rent the most apartments, but people who own small businesses are not excluded.

Airbnb led to an economic growth as it is directing the tourists' expenses in many parts of economy more or less by not offering complete services as hotels do. This fact balances the economy, by forcing tourists direct or indirect to purchase food and different services from other providers in other industries.

But overall tourism is a stimulating element for the global economic system. The sharing economy being the pioneer in making the world more sustainable and offering the opportunity for small entrepreneurs to develop in such a manner that everybody has the possibility to thrive.

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IS THERE ANY MORE SPACE FOR THE COOPERATIVES INTO THE ROMANIAN MARKET?

Alina-Elena Iosif¹, Sonia Capelli² and Mirela Octavia Sîrbu³

¹⁾³⁾ *The Bucharest University of Economic Studies, Romania*

²⁾ *Lyon University, IAE Lyon, Magellan*

E-mail: alina.balalia@com.ase.ro; E-mail: sonia.capelli@univ-lyon3.fr

E-mail: mirela.sirbu@com.ase.ro

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Abstract

As the cooperatives were visible and practical “engines” of the Romanian socialist economy, generations had to pass in order to diminish the negative association between the cooperative and the communist regime into the people’s mind. Even though the cooperative subject seems not so actual and with a low attractiveness for the new generation, the cooperative solution is more useful than ever, including in Romania, and an awareness increase among the young people should be supported. Moreover, the subject of the cooperative in the particular case of Romania has still remained an unexploited topic. The purpose of the current paper is to provide a picture on the current framework of the cooperatives in Romania from both young and senior consumers’ perspective. For the current study the technique of free association, namely keywords that respondents had to place in the semantics universe of the cooperative or non-cooperative (classic enterprise), was applied. The paper contribution regards a more in-depth understanding of the cooperatives’ status in the current Romanian economy, by taking into consideration the consumers’ view. Based on the results of the study, a necessity for solid knowledge and awareness on the forms of association among the young generation has been pointed out. In this way the young people would have the possibility to include cooperatives among their potential variants for their entrepreneurial future career.

Keywords

Cooperative, Romania, perception, consumers

JEL Classification

P13, Q13, J54, L 26, L31, D12

Introduction

In general, cooperatives are seen as entrepreneurial initiatives of the middle-class population, and even low-class population, that lead to the creation of small economic enterprises that

satisfy their social needs (Săulean, 1998 in Petrescu, 2011). Besides the cooperative predominant projection into the rural environment and mostly related to the agriculture, the trend invoked by Ben-Ner (2018, p.109) indicates a movement towards “an increase in the number of social non-profit and cooperative enterprises that are oriented towards the satisfaction of needs of specific ethno-cultural groups”. Moreover, even for the Romanian seniors that have an untapped potential in the area of entrepreneurship (Drăgușin et al., 2019), cooperatives could be considered a feasible solution to initiate or be part of a business.

Addressing the particular case of agriculture, most of the cooperative enterprises are hold by the local producers that have a lot of challenges to overcome in order to offer their products at competitive prices on the market. Even though numerous consumers express their interest in buying local products, they are not always fairly evaluating the quality of the products by comparing the prices with the ones practiced by big companies for similar products. In most of the cases, behind the local products there is a mechanism of production and distribution that implies high costs determining the local producer to practice high prices for his products. Given the situation, the producer has to be competitive on a market dominated by large scale products and in the same time to cover its costs and obtain an additional gain for its efforts. In the particular case of Romania, the food market is shared between the big chains of supermarkets that offer competitive prices, leaving almost no space to local producers. As Boboc et al. (2017) also highlight that there are numerous cases where the selling of the own production represents a truly challenge for the small producers.

The local producers have several options, out of which the followings are the most visible:

- they are focused on a particular niche of clients, different from the supermarkets, offering more exclusivist products to persons that are interested in buying from locals, based on their beliefs (higher quality, less additives etc.),
- they are forced to sale their products at a cheap price to various wholesalers;
- sale themselves the products by assuming the risk of not recovering their investment;
- they are finding solutions to cooperate and integrate their local products within the channels of distribution hold by the big players on the market.

In order to assure the contracts for selling the products, to support the distribution, to cover the potential loses and others, the cooperative could be considered as a viable solution that may offer the necessary support for the local producers to overcome these shortages of the market. Consequently, the local producer could diminish a part of these potential risks by becoming a member of a cooperative, but it depends also on the awareness of this form of association among them and their perception on it. Additionally, the increasing demand for local products is determining even more the local producers’ businesses to be part of an association (Stanciu et al., 2019). A local producer could be any one of us and it is important to be informed about the available levers of the market in order to obtain the maximum of a given situation. In relation to the valorisation of the cooperative as a potential viable option for the local producers, the paper is tackling the following research questions:

- What is the current opinion of the young and senior Romanian consumers on the cooperatives?
- What is the status of the cooperative compared to the classic enterprise into the consumers’ view?

The main aim of the current research paper is to provide an actualized picture on the cooperative framework in Romania envisaging its current necessity and utility for the market. The paper is addressing the question of market space for the cooperatives as a rhetorical one for both the producers and the consumers that are still influenced by the “old way of operating of a cooperative”. The current paper is offering answers by analysing the collection of the opinions both from the young people and seniors on the subject of cooperatives in Romania.

A snapshot on the “universe” of the cooperative in Romania

Cooperatives have appeared in Romania before the communist period, but between the second world war and 1989 there were seen as public enterprises whose management regulations were established by the public authorities (Galera, 2004 in Petrescu, 2011). Cooperatives were influenced by the communist ideology that considered the cooperative’s property as being a special collective and transitory form towards the state property. Moreover, cooperatives were acting as a principal actor in reaching the socio-economic objective of the political regime regarding the full employment of the labour market. At that time, the cooperatives were part of a strong hierarchized structure with a top down control assured by different specialized structures. The people were obliged to become cooperative members in order to benefit of various goods. In the rural environment, the consumers’ cooperatives were holding the monopoly on the area of both commerce and services, while the crafts’ cooperatives were holding the monopoly in urban area on the provision of services.

Nevertheless, there are opinions of several respondents to our current study revealing that *“cooperatives were a good choice at that time [communism regime], although many viewed them with reservation”* (F, 48 years old, rural environment) and *“At that time, these cooperatives were the economy of the country. I remember that they led to the achievement of the program focused on balanced economic and social development of the country's counties and on the systematization of all the localities.”* (F, 69 years old, rural environment). Indeed, the instauration of the cooperatives has not been accepted so easy by the people or even after the ending of the communist regime a negative perception has remained. *“Even if during the communist period the people who owned large areas of land opposed it[cooperative system], because the profits had to be divided and the production was not entirely theirs, the cooperative has turned to be the best thing since then, as a result, their abolition is a very bad thing for the agriculture.”* (M, 56 years old, urban environment).

The main problems of the cooperative system in Romania after 1990 were connected to the redistribution of the property towards the real owners and the introduction of the reforms associated to the market economy.

Nowadays, in Romania the cooperative societies are established and organized according to the Law no. 1 from 2005 regarding the organizing and functioning of the cooperative, with subsequent modifications and amendments. According to art 7(1) (Law no 1/2005) “the cooperative society is an autonomous association of natural and/or legal persons based on their free consent in order to promote the economic, social and cultural interests of the members of the cooperative, being commonly hold and controlled by the cooperative’s members according to the cooperative’s principles.” These principles have an international appliance, being recognized by the International Cooperative Alliance, and refer to voluntary and open membership; democratic member control; economic participation by members; autonomy and independence; education, training and information; cooperation among cooperatives; and concern for community.

The invoked law represents a major change in the legislative framework of the cooperative in Romania as it introduced major modifications regarding the decrease of the control expressed by the central units within the cooperative system and the elimination of the benefits offered by the state. According to the invoked law the cooperatives are not any more constrained to join counties or national unions, but in practice a high percentage of the cooperatives are affiliated. Each cooperative is independent and the counties/national union has no right to control or survey the cooperatives. Nevertheless, the power of the unions to coordinate the activity of the affiliated cooperatives is still high, as the highest proportion of the patrimony is hold by the unions themselves.

Opposite opinions on cooperatives, influenced mostly on their connection with the past in Romania, intrigued us to investigate the subject of consumers’ perception on the cooperatives

both from the view of the young generation and the seniors. In the following section the methodology of this research study is presented.

Methodology

The current methodology is designed in line with the main points of the methodology applied by Faure-Ferlet, Capelli and Sabadie (2017) in their work dedicated to the way French consumers are perceiving cooperatives. Our research is based on a projective study by using the technique of free association, namely keywords that respondents had to place them in the semantics universe of the cooperative or non-cooperative (classic enterprise). The cooperative subject was very little known by the audience that was constituted of 24 teams of 2 participants each and a team of 3 participants. A total of 25 teams representing 51 young persons (M age=21) were formed to carry out the research on the free association of 28 given terms to the concept of cooperative, classic enterprise, with both or none. After each team has distributed the keywords on their poster paper, a common discussion on the direct and indirect criteria they used when classifying a keyword on the side of cooperatives or not was carried on and the commentaries were noted. This research was conducted at the beginning of March 2020 in Romania. In addition, a group discussion where 10 young participants attended has taken place on March 10, 2020. A non-structured approach has been adopted for this group discussion offering the possibility to register also the implicit arguments offered by the respondents regarding their knowledge and perception on the cooperatives. For a more complete picture on the perception of the cooperatives, 7 opinions from seniors were collected in the same month. The profile of the seniors is heterogenous in terms of age (M age= 62) and social status. Finally, the content analysis has been applied and various patterns have been notified and exposed in the following section where the main dimensions associated to the cooperatives are pointed out.

The main dimensions associated to the cooperatives

A snapshot on the respondents' opinions regarding the way they associated each of the 28 keywords to one or both of the two categories, cooperative or classic enterprise, is provided in fig. no. 1.

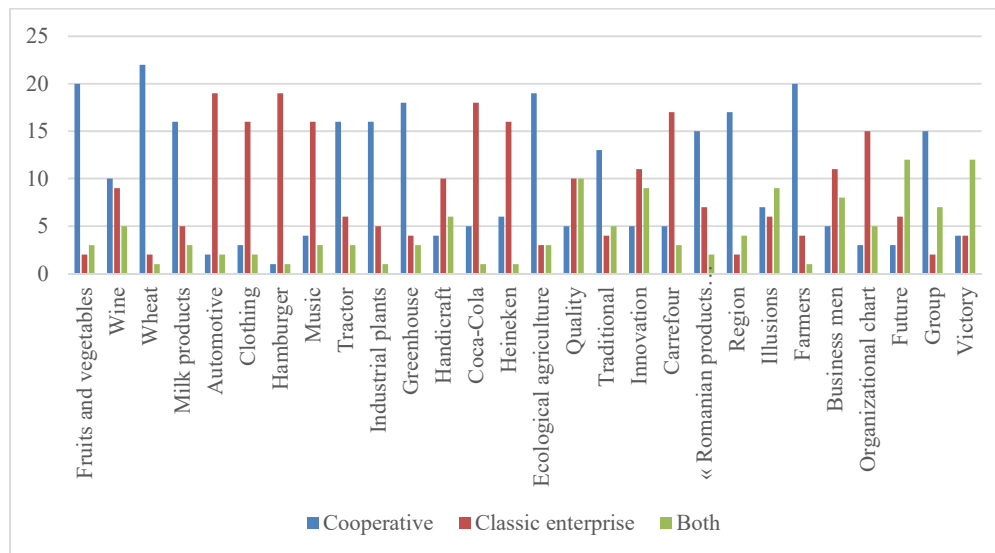


Fig. no. 1 The distribution of the respondents' opinions on the keywords

Source: own representation, based on the conducted research

The keywords that were predominantly connected to the cooperative concept were “fruits and vegetables”, “wheat”, “milk products”, “tractor”, “industrial plants”, “greenhouse”, “ecological agriculture”, “traditional”, the “Romanian products’ store”, “regional” level, “farmers”, and “group”.

The research conducted in Romania is revealing similar results as the one conducted in France, where Faure-Ferlet, Capelli and Sabadie (2017) have pointed out three main characteristics of the cooperatives from the consumers’ point of view, such as “community”, “agriculture”, and “proximity”. If is to discuss dimension by dimension, a series of common points between the opinions of the Romanian and French respondents are to be found.

The universe of a cooperative for the consumers in Romania is highly associated to the agriculture sector as in the case of France. The results of the *agriculture dimension*, such the fruits and vegetables, wheat, milk products, are predominantly nominalized by the respondents in relation to the cooperatives. These products are obtained through the efforts of the farmers, especially “*peasantry*” that are cultivating “*more natural products*”, “*not too artificial*” compared with the products sold by the big companies. “*The first thing I think of when I hear the word cooperative is agriculture and I believe that these cooperatives will never die in the villages. They sustain the Romanian agriculture and the sale of natural products. They should increase their number and replace the imported products with the natural ones, because the Romanian products are better.*” (M, 55 years old, urban environment). Imaginary pictures of “business men” and “organizational chart” are associated more to the multinationals’ environment and less to the image on cooperative that goes more connected to the “farmers”, “greenhouse”, and “traditional”. The same image is accepted also by the French respondents that perceive the cooperative production as being artisanal (Faure-Ferlet, Capelli and Sabadie, 2017). The products resulted out of the efforts deposited by the members of the cooperatives are perceived as being natural and highly connected with the “ecological agriculture”. As the farmers are producing in not such a big quantity as in the case of the classic enterprises, the products belonging to cooperatives are expected by the potential consumers to be more natural, as they are cultivated with a much more particular care and even with less chemicals.

The opinions of the respondents by associating cooperatives with the agriculture sector are also confirmed by the statistics of the International Cooperative Alliance (2020) where insurance sector is placed on the first place in relation to the economic activities where cooperatives are encountered, followed by the agriculture and food industries.

As the young consumers highlight, the more developed industries, such as automotive, clothing, music and fast food, are components revealing more the capacity of a classic enterprise to produce them and less probably their results are to be obtained by cooperatives that have producing, distributing and marketing limits.

When the respondents are asked about various brands of cooperatives or brands of products/services offered by the cooperatives, little opinions are expressed. But when talking about the “Romanian products’ store” that indeed is a cooperative, the respondents are guided after its name and place it preponderantly in line with the cooperative category. The name of the store that “*seems authentic*” and locally based made the respondents associate it to the cooperative and declare that “*[the store] most probably is offering particular products not distributed on large scale*”. As this kind of stores are present on the local market, they “*do not have the power to market themselves to the big public*”. In this respect, the majority of the respondents have associated big brands to the classic enterprises as they consider that the cooperatives wouldn’t have the financial power to market their products through the mass media channels dedicated to the large public. Moreover, the audience is not capable of nominalizing additional cooperative brands, precisely because of the lack of visibility of the concept and of the cooperatives themselves on the market.

The brands are often nominalized by the respondents in relation to the classic enterprise (“Coca-Cola”, “Heineken”, and “Carrefour”), as the cooperatives *“don’t have the financial and marketing force to produce this kind of products and advertise them properly [these famous brands]”*. As the cooperatives produce locally, they *“are not capable of producing large quantities and even more difficult to distribute them at national level”*. When brands are specified, the participants at the discussion group associate them with classic enterprises and with capitalism; a respondent specifying that *“for me these brands are something new, after the communism, and the cooperative is part of the communist period”*, being still related to the past (image built on the stories told by grandparents and / or parents), where the variant provided by the cooperative *“it was a sure thing, they had a fixed salary ... but on the other hand, you were stuck, you had to know how to manage your income.”*

The respondents associate cooperatives with local producers that offer *“good quality products”*, but in the same time *“they are making a lot of efforts to survive on the market”*. As the local producers are aware of their low force, not only financial, to activate alone on the market they could associate themselves in cooperatives, but *“a consistent investment [by the state, unions, cooperatives themselves] in promoting cooperatives has to be done”*. The way of acting as a “group” of the local producers would be the potential solution to overcome the shortages of acting alone on the market and obtain the advantages implied by being part of a “community”, such as the negotiation of large contracts and distributing the cooperatives’ products in large supermarkets. The solidarity is one of the keys that Romania would need to develop more in order for the “community” dimension to gain more visibility among the consumers. Efforts are done towards the development of the community spirit in Romania, but it is a long way to go up to the moment when the initiatives are absorbed and highly implemented in practice.

The proximity dimension, as in the case of France, could be outlined based on the answers given by the Romanian respondents. They are specifying very often the local producers and businesses in connection with “regional” level when talking about cooperatives. Some of the respondents are highlighting that there is a close relationship between the local producer and its consumers, but on the other way *“it makes it difficult for the potential consumers that are living in the town to benefit of the products obtained in rural areas”*. *“If I want to buy products from the farmers [from the point of view of a person living in the urban area], it is somehow difficult to purchase them if the cooperatives lack advertising”*. The Romanian consumers’ opinions are similar to the ones expressed by the French respondents in line with the proximity characteristic, pointing out the trust component gained by knowing the origin of the products. As regards the prices of the local products, the Romanian respondents are perceiving them as being higher than the ones practiced by the large companies for similar products. The name of the FruFru cooperative, which *“adapted to the present demands of the market”* is mentioned during the discussion. FruFru Cooperative is present in the area of Bucharest, distributing products in the Mega Image network. *“I knew the name of [the FruFru cooperative], but I didn’t realize that it was a cooperative.”* The participants acknowledge that the prices of the products made by the FruFru cooperative are quite high, being included in the category of expensive products compared to other variants offered on the market, but on the other hand these prices are justified by the quality of the healthy ingredients used. The cooperative’s products would target consumers with slightly higher incomes, if referred to fresh vegetables and fruits produced by local farmers. Advertising is a powerful tool to make the cooperatives’ products visible on the market, but *“as cooperatives grow their business, it is possible to experience a marketing budget increase, leading to the awareness improvement of their brands among the customers”*.

There were also keywords that made the respondents pledge for both the cooperative and the classic enterprise variants. “Quality”, “illusions”, “future”, and “victory” are the keywords that are named by most of the respondents as belonging to both the cooperative, and the classic

enterprise. “Quality” is qualified as being provided by the cooperatives, as much as by the classic enterprises. The “future” and the “victory” are associated to both the cooperatives and the classic enterprises, consumers pointing out the coexistence of both of them on the market. The cooperative could primordially bring wealth and development in the less developed areas, while the classic enterprise is more connected to the developed economic mechanisms of the market that generate demand for its products and/or services. Competition could be anywhere, but in the less developed regions solidarity is more necessary in order to generate common good for all the participants, while the classic enterprise tend to act alone on its niche to gain market share. There are a lot of examples of strong cooperatives that are competing with huge multinationals and they are sharing the market at national level. A picture on the top 10 cooperatives at the international level based on turnover is provided by the International Cooperative Alliance and EURICSE (2020) in the World Cooperative Monitor 2019, where Groupe Credit Agricole is placed on the first place, followed by the Groupe BPCE, both from France, and REWE Group from Germany occupying the third position in the 2017 ranking. Further on, the respondents are considering that the future is belonging to both forms of businesses, the cooperative being “*more oriented towards societal wealth*”, while the classic enterprise “*goes more towards individual benefit*”. In the latter case it is worth mentioning that at least the big enterprises have allocated budgets to social corporate responsibility campaigns in the last 10 years in Romania and investing in the societal welfare.

Conclusions

The current paper is exposing the universe of the cooperatives by offering a picture on their status in Romania and the consumers’ perception on them. The conducted research pointed out that three main characteristics, namely agriculture, community and proximity, are attributed by the consumers to the cooperatives. These characteristics were formulated into a study conducted in France and were confirmed by our current study. The dimension that needs a consistent improvement in the case of Romania is referring to the “community” spirit that is essential for the initialization and development of the cooperatives. Beyond the spirit itself, there are places in the world where community cooperatives are naturally implemented starting from the diversity of the community needs and based on the intensive citizen participation (Mori, 2014).

The results of the study indicate that the cooperative status is influenced by the restrained attitude of the seniors and the lack of connection to the young generation that has a scarcely knowledge about the subject. This current position of the cooperatives in the consumers’ mind would give room for the expansion of the cooperatives and for sure, a lot of work has to be done in order to familiarize and attract young people to adopt and join cooperatives. The awareness increase of the cooperatives among the new generation should constitute one of the main points of discussion on the agenda of the cooperatives’ unions that would have all the interest to expand this viable way of association for the development of the Romanian economy.

A further line of research consists of finding out how cooperatives could constitute pertinent solutions that react and correspond to the demands of the new economic and social context generated by the current sanitary crisis.

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THE TELEMEDICINE AND ICT AS TOOL TO IMPROVE THE LOCAL HEALTHCARE

Matteo Rivezzi¹, Caterina Tricase² and Roberto Leonardo Rana³

¹⁾²⁾³⁾ *University of Foggia, Italy*

E-mail: matteo.rivezzi@unifg.it; E-mail: caterna.tricase@unifg.it

E-mail: roberto.rana@unifg.it

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Abstract

The recent worldwide experience related to the health emergency of the Covid-19 pandemic has highlighted a renewed interest in telemedicine. This health care system assisted by technological innovation including, for example, ICT (Information Communication Technology) and support by smartphones and tablets allows treating patients directly at home, avoiding contacts with health professionals. Moreover, telemedicine offers the possibility of reorganizing healthcare, moving the focus of care activities from the hospital to the territory and a series of economic, social and environmental advantages. The introduction of ICT and telemedicine can be a valuable tool in support of the management of endocrine diseases such as diabetes which represents one of the main chronic diseases common spread in Italy. Diabetes treatment is certainly one of the fields in which telemedicine and eHealth have been principally tested. In this context, the present work intends to give an overview of the new opportunities offered by telemedicine and various medical devices used to the care and assistance of patients among those suffering from diabetes. In particular, some information is presented on the spread of this pathology in the province of Foggia and on the estimates of the costs incurred by the local health system. Possible applications of telemedicine could be implemented to improve the treatment and control of this pathology in this territory.

Keywords

Telemedicine, diabetes, ICT, Covid-19, healthcare

JEL Classification

I15

Introduction

The recent worldwide experience related to the health emergency due to the Covid-19 pandemic, has shown a great technological and social interest for new trends in sustainable business including medical devices and information and communication technologies or ICT (Information Communication Technology) the so-called telemedicine (Moazzami et al., 2020). These tools are generally used in the remote healthcare sector but with the appearance

of the Covid-19 have been used also to fight this new infectious agent. It can be said that Italy was one of the first countries in the world to experiment the telemedicine, with the transmission of electrocardiograms from a distance since 1970. Almost forty years later the Emilia-Romagna region established, with the participation of others Regions (Tuscany, Liguria, Marche, Campania, Veneto, Sicily and Lombardy) the National e-Care Observatory. This monitoring structure was accomplished also following a special agreement stipulated with the Ministry of Health. The aim of the e-Care Observatory was to evaluate and monitor telemedicine applications, to allow the exchange of good practices and related technologies, as well as to improve the accessibility and effectiveness of the services provided online to citizens. A few years later, the European Commission issued document COM (2008) 689 on "Telemedicine for the benefit of patients, health systems and society", aimed at supporting Member States to implement the Telemedicine services through the European territories by specific initiatives such as: a) building trust in Telemedicine services; b) to encourage its acceptance; c) clarify the legal aspects in the member states; d) to solve technical problems; e) facilitating the development of the market (Commissione della Comunità Europea, 2008). Following this communication, on 10 July 2012, national guidelines on Telemedicine were approved by the General Assembly of the Superior Health Council (Ministero della Salute, 2012a) in Italy. Later, in 2017 the National Center for Telemedicine and New Care Technologies was established by the Istituto Superiore di Sanità (ISS), whose aim is to conduct, promote and coordinate research and system governance for social applications and healthcare in the field of new information technologies and telemedicine (<https://telemedicine.iss.it>) (ISS, 2018). Telemedicine assisted by ICT allows to treat patients directly in their homes, avoiding contact with doctors and nurses. More generally, the introduction of this form of care entails advantages in terms of economic, social and environmental sustainability, as well as promoting programs for the prevention of certain diseases such as diabetes. It is often difficult to treat sick people in inaccessible territories or in rural areas where the utilities are very far from the health assistance centres, especially when the population is elderly and there are problems for transport to the hospital. In addition, moving from home to hospital involves fuel consumption and car use contributing to both greenhouse gas emissions (especially CO₂) and roads congestion (Cravo et al., 2013). Furthermore, there is no doubt that treating patients at home results in savings for the national health system (NHS) and a reduction in overcrowding in receptive health facilities. However, studies on economic analyses are limited while no cost-effectiveness assessment has yet been performed (Tsou et al. 2020). Currently, through telemedicine it is possible to cure different pathologies such as diabetes and endocrine pathologies, neuromuscular diseases, cardiovascular emergencies, rehabilitation activities, etc. (Ministero della salute, 2012a; Ghosh et al., 2020). Therefore, technological innovation and the tools used by telemedicine (devices and ITC) can contribute to a reorganization of health care, in particular by moving the focus of health care from the hospital to the local territory (Amicizia et al., 2013). Regarding the ICT solutions currently available on the market can have overlapping combine use with the technologies widely diffused on the market such as mobile telephony, tablet and smartphone medical devices, broadband networks, etc. Moreover, the reduced size and costs and the easy use in domestic environments of these devices, it allows to effectively manage all collaboration activities among health care stakeholders, including the patient and his family (Ministero della Salute, 2013). The present paper aims to provide an overview of the new opportunities offered by telemedicine and the different devices for the care and assistance of sick people and in particular those with diseases characterized by polyuria, polydipsia and polyphagia such as diabetes. In addition, some information is presented on the spread of this disease in the province of Foggia and on the estimates of the costs incurred by the local health system.

Telemedicine as service to improve the healthcare delivery system

Telemedicine which literally means "distance healing" was introduced in the 70s of the last century. It can be considered as a subset of telehealth, since it refers exclusively to the provision of health services and distance education of patient, through the use of telecommunication technology. According to the World Health Organization (WHO) there are more than 100 definitions among which the most accredited one states that: *telemedicine allows the delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities* (WHO, 2010).

Telemedicine includes the use of electronic communications and software to provide clinical services to patients without visit to them in the hospital. The technology in Telemedicine is often used for disease diagnosis, follow-up visits, management of a patient's chronic condition, planning and control of drug delivery, specialist advice and a range of other clinical services that can be provided remotely using tablets or smartphones connected via Wi-Fi or Bluetooth. To date, this healthcare model has been based on spontaneous and fragmented initiatives, therefore, to spread it on a national scale, it is necessary to move to a planned and regulated strategic interventions that involves all the actors of the hospital management system. In this way, by slightly modifying the processes and assistance services it is possible to ensure the coverage of professional skills in disadvantaged or isolated or difficult to access territories such as rural areas. Furthermore, Telemedicine can support the hospital sheltered discharge, the reduction of hospitalizations of the chronically ill people, the less use of hospitalizations for the elderly and nursing homes, the reduction of patient mobility in search of better treatments. Moreover, it allows the creation of specific care models for individuals with chronic diseases or with more complex needs, such as the elderly, prisoners or disabled people. Therefore, this new organizational model improves the quality of health care by ensuring the quality and continuity of care for all. Telemedicine is also able to promptly support an assistance network during major events or in response to natural disasters or collective emergencies such as the recent pandemic from Covid-19 (Ministero della salute 2012). Among the other advantages offered by telemedicine there is the possibility of making the communication among the various stakeholders (i.e. health managers, doctors, patients, etc.) usable and continuous, directing the use of the available resources (i.e. economic, hospital personnel, etc.) in a more rational and appropriate way. In addition, patient waiting times as well as complication risks are reduced. Therefore, an organizational model like this can lead to the rationalization of socio-sanitary processes with a possible impact on the containment of health expenditure while reducing, at the same time, the social cost of diseases. However, the economic importance of telemedicine not only manifests itself in a potential containment of healthcare expenditure, but also in a significant contribution to the economy, in a sector in which the European industry above all ITC and medical devices, but also the national one (including numerous small and medium-sized ones companies) is in a good position and has undergone rapid expansion in the last decade. According to a study by BCC Research (2018) the global value of the telemedicine market reached \$ 31.2 billion in 2018 and is expected to reach \$ 72.5 billion by 2023. These estimates are likely to grow further in the coming years, considering the importance of telemedicine in containing infections.

Devises which contribute to improve the telemedicine

Telemedicine and electronic healthcare, and more generally that of technologies applied to medicine (medical devices), is one of the industrial sectors with the highest rate of innovation. As mentioned, the ITC can assist the development of telemedicine and can be considered as the set of methods and technologies that implement the systems of transmission, reception

and processing of information useful for the diagnosis, treatment and control of diseases. In Italy, in particular, in recent years there has been a strong push towards a technological evolution that goes in the direction of the Digital Transformation of the country, with investments that aim to implement solutions at the base of the "Third Platform" such as Cloud Computing, Mobility, Social Business, Big Data and Analytics. In this direction, the awareness of even medium-sized companies of the importance of ICT as an indispensable tool to improve their level of competitiveness on the reference market has significantly accelerated. The importance of this sector is evidenced by the growing turnover that recorded in 2019 an expenditure of Italian companies that exceeds 31 billion €. This value increased by 2.3% compared to 2018, and this expenditure will reach almost 31.5 billion € in 2020, with a growth of 0.9% compared to 2019 (Assintel, 2020). In the monitoring of diabetes, it has a not only diagnostic but very useful function to better treat this pathology and prevent very frequent complications over time. It is also essential to test and verify adherence to the therapeutic program assigned to the patient after diagnosis. Care follow-up is carried out today, almost exclusively, using outpatient checks and glucose measurements with equipment and kits with rapid response (provided free of charge by the NHS in Italy and distributed by the pharmaceutical service). Today there are similar tools equipped, however, with a direct transfer system via Wi-Fi or Bluetooth connection mode using the latest generation smartphone. These cell phones are increasingly used as a tool for health monitoring thanks to the new processors with greater computing capacity, the availability of more capacious memories, larger screens and open operating systems that favour application development (Crico et al., 2018). This allows to speed up the analysis, data transmission and above all the reduction of costs. For some years, small devices, the so-called 'glucose sensors', have been available for continuous glucose monitoring (CGM). These are devices which are little more than a coin and slightly thicker, which are fixed to the skin with an adhesive and which, through a small cannula which passes through the skin, allow to continuously detect the level of glucose in the interstitial fluid of the subcutaneous, providing hundreds of values per day. Two types of systems are currently available: real-time CGM (real-time CGM, rtCGM) and intermittently viewed CGM (iCGM), also called glucose flash glucose sensors (flash glucose monitoring, FGM). Both systems provide information about current and past glucose levels, thus providing valuable information to prevent dangerous blood sugar fluctuations. In some of these systems it is also possible to activate alarms that go off in case of hypoglycaemia or hyperglycaemia (Bruttomesso et al., 2019).

Telemedicine and diabetes

In general, ICT management and telemedicine in particular, can be a valid tool to support the management of endocrine diseases such as diabetes which represents one of the main chronic diseases. In particular, the treatment of diabetes is certainly one of the fields in which telemedicine and eHealth have been most tested. The chronic nature of the disease and the need to empower patients make diabetes mellitus an ideal context for testing ICT with the aim of supporting home care.

In general, diabetes as a chronic disease requires frequent visits to the doctor for periodic check-ups, lifestyle advice and treatment adjustments. In this situation, telemedicine can help patients to get in touch, comfortably from home, with their doctor away from hospitals, also decreasing the chances of contracting infections. However, the telemedicine service does not replace traditional health services in the personal doctor-patient relationship, but supplements it to improve efficacy, efficiency and appropriateness. Thanks to special devices, doctors can interact with the patient, analyse the patient's medical history, analyse blood values such as blood sugar or blood pressure and provide advice. Since the early 90s of the last century, various telemedicine projects and studies have mainly focused on type 1 and type 2 diabetes. Initially, the projects consisted of: *structured-telephone support*, that is, remote management

of the patients provided through structured telephone contact between patients and healthcare professionals - with or without home visits and reporting of symptoms or physiological data; or *telemonitoring* characterized by the use of particular sensors connected to the patient, whose signals are transferred wirelessly to a central station or "node". The anomalies observed trigger a response from healthcare professionals. Subsequently, interest in this innovative care system increased. Furthermore, compared to the previous decade, most of the new projects have used new devices or processes for better management of the diabetic patient. For example, by using a remote monitoring device, the blood glucose level, blood pressure, heart rate and weight were controlled. The patient then received a series of educational messages on the cell phone about the disease (diabetes, high blood pressure) and comorbidity factors. Other projects included self-measurement of the evening blood glucose level and transmission of information to the health care centre via a web portal. Finally, between 2015 and 2019, numerous telemedicine projects based on machine learning devices that use artificial intelligence and ITC (elements that define telemedicine 2.0) have emerged, or are still in progress, whose devices were connected via Bluetooth or Wi-Fi for monitoring type 1 and type 2 diabetes and its comorbidities. All diabetic patients involved in telemedicine projects have shown a marked improvement in the quality of life and some parameters such as glycated haemoglobin (HbA1c) and the content of low-density lipoprotein (LDL). In addition, telemedicine has made patients more aware of their state of health by promoting greater adherence to therapeutic and hygienic-dietary measures (Andr s et al., 2019). Moreover, other scientific studies on the use of telemedicine in diabetic patients have also shown benefits to patients who use telemedicine. In fact, a recent meta-analysis carried out in China showed that diabetics followed video chat, mobile phone and e-mail remotely had a reduction of HbA1c by 0.37% (p 0.001) compared to controls. The research carried out on 35 randomized studies involved over 3500 patients followed over a period of time from 3 to 60 months. Similar results have been obtained in another research which analyzed 21 randomized studies on patients with diabetes (for a total of 2768 people). These patients have been treated with interactive telemedicine (remote monitoring or video chat in real time) in addition or alternatively or partly replaced by standard therapy. On the contrary, the controls were treated by standard therapy only. The survey showed a reduction in HbA1c by 0.31% (p 0.001) in telemedicine patients compared to controls. A meta-analysis of 46 studies, which included 24000 patients with type 2 diabetes mellitus (T2DM) and 2052 patients with type 1 diabetes mellitus (T1DM), also showed an overall average reduction in HbA1c from 0.12% to 0.86% for T2DM and from 0.01% to 1.13% for T1DM (Ghosh et al. 2020). In Italy in November 2019, a national study was launched by the Associazione Medici Diabetologi (AMD) and ISS to verify the benefits of using telemedicine to treat diabetics. The aim is to evaluate on a sample of about 1000 patients with type 2 and gestational diabetes whether the use of a home telemedicine system, associated with remote educational support, improves glycemic control and the cardiovascular risk profile compared to normal methods of management by the diabetology service. The project is based on its ability of patients to self-manage the disease and on maintaining continuous contact with the health service, reducing the need for visits to the diabetes clinic (Martucci, 2019). According to Istat data in 2016, there were over 3.2 million people with diabetes in Italy, that is 5.3% of the entire population (16.5% among people over 65). Since diabetes is a pathology strongly associated with the socio-economic disadvantage, it is more widespread in the southern regions where the age standardized prevalence rate is 5.8% against 4.0% in the North. Particularly among 45-64year olds the percentage of obese people suffering from diabetes is 28.9% for men and 32.8% for women. In the same age group 47.5% of men and 64.2% of women with diabetes do not engage in any light physical activity in their spare time (ISTAT, 2017). In particular in the Apulia region, in southern Italy, in 2018 the average discharge rate of diabetes mellitus in patients over the age of 45 was 8.28%. The province of Foggia was the one with the greatest spread of this

pathology (second in incidence in Italy) with a rate higher than 16% (Fig. no. 1). Diabetes in Italy has a total cost which in 2017 was 20.3 billion € per year, of which 46% of direct costs and 54% of indirect costs. Within the former, about half (49%) are due to hospitalizations, 7% to diabetes drugs, 17% to patient visits, 23% to other drugs. Conversely, the use of devices would significantly reduce expenses considering that they would affect between 4-7% of the total costs inherent in the treatment of the disease. On average, the average cost of hospitalizing a diabetic patient exceeds 5,000 €. It has been estimated that increasing spending on devices by only 3% would result in a 34% saving in healthcare costs. This means that the NHS would save more than 4,4 billion per year considering that annually the cost to treat people with diabetes is 10 billion €, to which must be added 3 billion spent by individual patients (SID, 2017). So, it is wrong to consider that technological innovation is the first reason for the increase in healthcare costs.

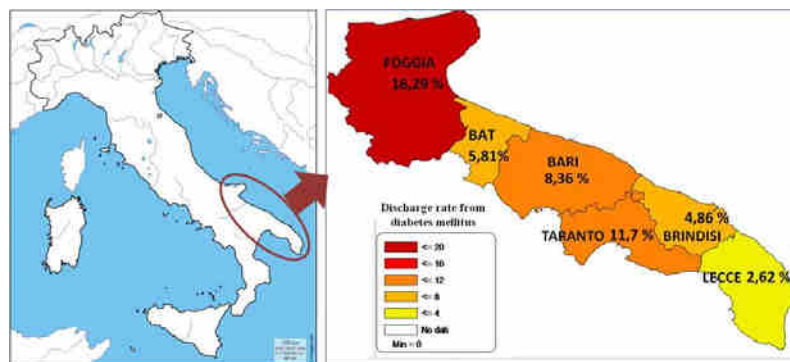


Fig. no. 1 Discharge rate from diabetes mellitus in the Puglia region

Source: our elaboration

The Apulia region, therefore, could take advantage of the introduction of telemedicine both in economic efficiency terms of the assistance service provided. The province of Foggia, in particular, would be the one that more than the others would benefit from it since it is characterized by a large territory with a high percentage of the elderly population. In Italy, each diabetic patient requires on average an annual total expenditure for direct costs of approximately 2,800 € (Marcellusi et al., 2014). Considering that in the province of Foggia in 2016 about 500 diabetics were discharged (ISTAT 2016) the health expenditure incurred for their treatment was almost 1.4 million €. This estimate, however, can increase if we also consider complications such as: a) nephropathies and macrovascular complications, which require amputations and revascularizations of the lower limbs (4,500-5,000 €/year per patient); b) cerebrovascular pathologies (3,500 €/year per patient); heart disease, retinopathy, neuropathy and acute complications (1,500 and 2,000 €/year per patient) (Lee and Lee, 2018). Therefore, since the cost incurred by the regional health system can reach considerably high values, the introduction of telemedicine could help keep healthcare costs low.

Conclusions

From what has been highlighted, it is easy to understand what the benefits of introducing telemedicine could be to our society. From the observation of epidemiological data on diabetes, it is easy to deduce that this pathology is continuously increasing, and that in Italy in the next few years it will go from 3 million € in 2014 to 5 million € in 2030. This pathology, in addition to causing a low quality of life for the patient, to involve the affective aspects concerning his family weighs economically on society. Its treatment, in fact, has significant direct healthcare costs, with a high per capita cost: for this reason, there is a need to resort to effective and inexpensive care systems and treatments that respond promptly to the

emergency. Telemedicine services therefore give the opportunity to solve problems both economically and socially. As highlighted, the introduction of this health care system has led to positive results regarding patient care. This does not imply healing the patient, but an improvement in his quality of life and his family, with a consequent positive approach to the disease, increasing tranquillity and awareness of his health. The introduction of new cheaper devices with numerous applications combined with ICT and the greater diffusion of smartphones and tablets makes the transition to telemedicine faster and more pervasive within the nation's health system. The Apulia region and in particular the province of Foggia characterized by a percentage of diabetic patients in Italy could avail of these advantages. Therefore, the development of a good telemedicine system allows not only to have a rapid exchange of information between patient and doctor, a reduction of hospitalizations of patients and a prevention of critical events, but also a knowledge and greater acceptance of new technologies in the field of national health.

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ANALYSIS OF THE LABOUR FORCE IN THE MOST TWO INHABITED REGIONS FROM ROMANIA – SOUTH-MUNTENIA AND NORTH-EAST

Maria-Floriana Popescu¹ and Bogdan-Cristian Chiripuci²

^{1) 2)} The Bucharest University of Economic Studies, Romania

E-mail: maria.popescu@rei.ase.ro; E-mail: bogdan.chiripuci@gmail.com

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Abstract

Throughout recent years, the economy has changed in the face of numerous challenges, and adults and young people are still struggling to thrive, as employers are still struggling to find eligible job applicants. While regional policies and national programs have tried to solve these challenges, a great deal of action is taking place locally to promote healthy workforce and boost economic development. The country we shall analyse, Romania, has started to face lately a lack of labour force in almost all fields. To this end, the research will try to make an x-ray on the number of vacancies in the two most populated areas of the country, North-East and South-Muntenia regions, but also on the volume of unemployed available. In this sense, based on the connection between the analysed indicators, a correct and clear perspective to current and future entrepreneurs will be possible to be offered. At the same time, it will be considered the accomplishment of some proposals which, in the short and medium term, will reduce the number of vacancies and unemployed both locally and nationally. In addition, areas of shortage were found - manufacturing, wholesaling and retail; motor and engine repairs; transportation and storage; public administration and defence; public social insurance; health and social assistance. In this sense, the aim of this article is to establish a sustainable strategy, including to suggest partnerships in all fields.

Keywords

Labour market, Unemployment, Regional policies, Job vacancies

JEL Classification

P10, J40, O10

Introduction

There are significant shifts in the way social and economic processes unfold nowadays and city areas have become modern strategic hubs where public policy plays an important role in the local development and progress. Cities are drivers of economic growth but also places of

social exclusion, and urban policymakers face the dual task of preserving prosperity while tackling the rising social inequality. Increasing income and spatial inequality in city regions underlines the increasing divide between high-paid, knowledge-intensive jobs, and low-paid, discretionary jobs, highlighting the fact that many people are stuck on the wrong side of the “talent divide” of the modern economy.

Integrating a wider cross-section of society into local labour markets has not only the ability to increase the workforce available, but also to provide pathways to poverty alleviation (Haggblade, Hazell and Reardon, 2010). Although the advent of collaborative structures to tackle diverse policy areas that span policy fields, scalar rates, and public and private realms is traditionally correlated with European urban areas, countries from all over the world are increasingly focusing on alternative modes of cross-sectoral governance involving community-based actors, the convergence of social and economic policies, and the importance of a local-based approach. Local employers are searching for employees with the skills needed to help them run and expand their businesses. Local leaders are finding ways to improve their economies and communities by developing their workforce and increasing the employment opportunities. The system’s primary purpose is to act as an intermediary to ensure that managers, teachers, service providers and participants work together to achieve their individual and mutual objectives.

However, in the absence of consistent national and regional labour market policies that are responsive to local needs, municipal governments lack the resources and policy ability to implement workforce development strategies on their own and networks of public and private labour market partners have begun partnering to tackle local labour market challenges. The presence of new players in the policy process, the resulting blurring of public-private borders and the perceived weakening of local political authority have drawn attention to the role of local networks in the process of urban policymaking in general (Pierre, 2016; Hambleton, Savitch and Stewart, 2002; Di Gaetano, 1999), and in particular in the creation of workforces (Clarke, 2004; Pastor, 2000; Duranton, 1999; Clarke and Gaile, 1998). Though inadequate theoretical attention has been paid to the design and longevity of these networks, or to the essence of their relations with each other and the local state. Cross-sectoral cooperation between the interests of social and economic growth is a dynamic threat to governance and an inherently political mechanism (Haiss and Sümegi, 2008; Lafferty, 2006; Chapple, 2005; Clarke, 2004). Workforce growth, with its focus on balancing economic performance and social justice issues, offers a valuable framework in which to empirically analyse how abstract discussions regarding collective government and democratic networks in democratic communities play out in the daily life and activities.

Over the past decades, the character and conditions of labour markets have been redefined by various social and economic factors (Wilthagen and Tros, 2004; Schmid and Gazier, 2002; Leontaridi, 1998). Also, the same factors that have increased productivity and put the economy on a record path of growth and development have made it harder for both employers and employees to manage the business, acquire the skills required and exploit opportunities that foster success and innovation (Banting and Medow, 2013). Although the evolving nature of work and industry is daunting for all, in the last years especially hit were vulnerable and moderately competent individuals. Trends which include externalization of non-essential roles and subcontracting, and the increasing growth in contractual and contingent job arrangements attest the fact that businesses are cutting back on their internal employees in an attempt to minimize costs, improve flexibility (Wilthagen and Tros, 2004), and concentrate more energy on the core aspects in their companies as to stay competitive. Many attempts to improve productivity have seen businesses and industry as a whole abandon urban places in search of tax cuts and lower overheads in outlying suburbs. Such patterns increase the probability that low-income job seekers, many of whom are concentrated in urban areas, would have small opportunity horizons for the positions they fill (Ihlanfeldt, 1997). Jobs that

are readily accessible to low-skilled individuals are less likely to provide steady, stable employment, thus reducing the chances of employees obtaining the skills, training, and personal relationships and networks that have historically allowed upward mobility.

Community officials face many challenges when it comes to building and improving their workforce. Some local industries can experience rapid growth while others decline. Although more staff with unique skills and qualifications may be required to help a particular industry, local training providers may not be able to provide similar programmes. Significant numbers of adults may be lacking practical skills or have other personal barriers to operate, such as a lack of accessible childcare or appropriate transportation means. Young people may not be getting the proper guidance from college or the professional experience needed to train them for workplace success. A local area may be a single county or city, or a wider region that includes several jurisdictions, each with its own distinct and dynamic employment problems and economic challenges to tackle (Herrschel and Newman, 2003; Stöhr, 1990).

The job vacancies and the unemployed from South-Muntenia and North-East regions

At European level, any public policy evaluation process is based on the data and information provided by the monitoring system under the responsibility of the institutions empowered to implement, examine the monitoring framework of the strategy in terms of decision, information circuit and structuring and the quality of the information provided, that is on a necessary and important approach. In this regard, the National Employment Strategy is an element of integration of the national public policy at the level of the EU public policy, fact for which, before analysing the monitoring system at national level, an analysis of the monitoring system is necessary and evaluation at EU level.

The monitoring system at EU level is not just a mechanism for collecting data and calculating indicators, because it aims to achieve the reforms with which policies in various fields (including employment) in Romania tend to be converged.

At national level, in Romania, the implementation of the National Employment Strategy 2014-2020 (SNOFM 2014-2020) is nearing the end of its strategic period and in this context, we propose to analyse its effects and course in the most populated regions development in Romania, respectively South-Muntenia and North-East, for the period 2014-2019. This research aims to conduct a transparent analysis of both the number of job vacancies and the unemployed, to represent a starting point for implementing a new strategy at the regional level. In this way, depending on the field of activity and the number of unemployed, we propose to make a classification according to each person's qualification to later observe the real need for job vacancies, declared today. Moreover, if there is an oversupply of staff in a certain field, we think that a good idea would be the conducting of training courses strictly in areas that have a labour shortage.

Regarding the implementation of development policies strictly at regional level, it was carried out according to Government Decision no. 488 of May 24, 2001, the organization and functioning of the National Institute of Statistics, which provides for the creation of eight general directorates regarding regional statistics. In this regard, according to NUTS (Nomenclature of territorial units for statistics in Romania) II, the eight development regions at national level were realized. From these, the two regions chosen for analysis are South-Muntenia, which is entirely in Muntenia area and has a population of 3,267,270 inhabitants with an area of 34,489 km², while the Northeast region includes the area of Bucovina and most from Moldova, with a population of 3,712,396 inhabitants, spread over 36,850 km².

Table no. 1 Job vacancies in the South-Muntenia region

Activities of the Romanian economy	YEAR					
	2014	2015	2016	2017	2018	2019
	NUMBER					
A. Agriculture, forestry and fisheries	46	81	102	117	100	144
B. Extractive industry	2	7	4	4	:	19
C. Manufacturing industry	1.406	2.008	2.861	2.405	2.169	1.533
D. Production and supply of electric and thermal energy, gases, hot water And air conditioning	7	1	4	12	4	7
E. Water distribution; sanitation, waste management, decontamination Activities	83	171	119	116	180	127
F. Constructions	203	150	199	332	130	106
G. Wholesale and retail trade; repair of vehicles and engines	176	448	519	680	669	598
H. Transport and storage	232	494	471	440	515	483
I. Hotels and restaurants	29	55	49	97	113	38
J. Information and communications	11	13	70	47	51	84
K. Financial and insurance intermediaries	49	54	75	105	74	63
L. Real estate transactions	3	8	12	13	28	31
M. Professional, scientific and technical activities	107	182	258	151	123	89
N. Administrative services activities and support services activities	132	94	97	90	74	90
O. Public administration and defense; social insurance in the public System	818	1.475	1.132	1.140	841	678
P. Education	244	30	27	22	67	115
Q. Health and social assistance	656	1.120	1.800	1.451	1.263	1.387
R. Performance, cultural and recreational activities	65	115	138	133	100	95
S. Other service activities	988	1.037	1.062	1.125	1.375	1.160
TOTAL	4.288	6.527	7.949	7.375	6.524	5.698

Source: National Institute of Statistics in Romania

Regarding the number of job vacancies in the South-Muntenia development region, it is found that areas such as manufacturing, health and social assistance, but also other service activities register the highest level of labour shortage. On the other hand, the extractive industry, the production of electricity and heat, gas, hot water and air conditioning, but also real estate transactions report the minimum level of job vacancies. At the same time, according to Annex no. 1, it can be observed that the manufacturing industry registers the highest level of labour shortage at national level, the South-Muntenia region reporting approximately 15% of this total necessary of Romania, in the period 2014-2019. Among the fields that registered a decrease in the number of job vacancies, within the analysed period, we mention constructions, professional, scientific and technical activities, administrative service activities and support service activities, education, but also public administration and defence; social insurance in the public system. Therefore, a worrying thing is due to this low number of economic activities, because most entrepreneurial activities report an increase in the need for labour, an aspect that is found, of course, in this region, where job vacancies support an increase in approximately 32.5% in 2019, compared to the base year.

Table no. 2 Job vacancies in the North-East region

Activities of the Romanian economy	YEAR					
	2014	2015	2016	2017	2018	2019
	NUMBER					
A. Agriculture, forestry and fisheries	143	130	128	94	103	126
B. Extractive industry	10	29	51	6	4	2
C. Manufacturing industry	1.235	1.093	1.158	1.306	1.347	1.199
D. Production and supply of electric and thermal energy, gases, hot water And air conditioning	10	13	17	35	31	38
E. Water distribution; sanitation, waste management, decontamination Activities	60	68	100	84	142	129
F. Constructions	177	283	311	276	600	972
G. Wholesale and retail trade; repair of vehicles and engines	205	368	455	362	590	581
H. Transport and storage	76	129	104	122	240	176
I. Hotels and restaurants	49	146	75	96	120	167
J. Information and communications	51	115	93	122	194	113
K. Financial and insurance intermediaries	54	52	81	81	54	42
L. Real estate transactions	-	1	1	1	7	3
M. Professional, scientific and technical activities	48	96	125	107	116	57
N. Administrative services activities and support services activities	166	147	216	176	227	305
O. Public administration and defense; social insurance in the public System	447	819	799	600	420	355
P. Education	387	454	331	229	133	108
Q. Health and social assistance	991	1.175	1.402	1.638	883	775
R. Performance, cultural and recreational activities	99	122	156	159	136	68
S. Other service activities	1	9	2	50	1	4
TOTAL	4.209	5.249	5.605	5.544	5.348	5.220

Source: National Institute of Statistics in Romania

It is found that the number of job vacancies in the North-East development region has the highest level of labour shortage in areas such as manufacturing and health and social assistance (table no. 2). On the other hand, the extractive industry, real estate transactions, but also other service activities report the minimum level of job vacancies. At the same time, according to Annex no. 1, it can be observed that the manufacturing industry registers the highest level of labour shortage at national level, the North-East region reporting approximately 8.6% of the total of this necessary of Romania, in the period 2014-2019. At the same time, the minimum necessity for job vacancies at national level is reported in real estate transactions, where this development region registers approximately 1.7% of the necessity of Romania. Among the fields that registered a decrease in the number of job vacancies, within the analysed period, we mention agriculture, forestry and fishing, extractive industry, manufacturing industry, financial intermediation and insurance, public administration and defence; social insurance in the public system, education, health and social assistance, but also entertainment, cultural and recreational activities. Therefore, a worrying thing is due to these economic activities, because most entrepreneurial activities report an increase in the necessity for labour, an aspect that is found, of course, in this region, where job vacancies support an increase of approximately 24% in 2019, compared to the base year.

Table no. 3 Unemployed registered in the South-Muntenia region

COUNTY	YEAR					
	2014	2015	2016	2017	2018	2019
Arges	189.587	168.137	148.478	130.375	108.369	93.268
Calarasi	96.179	92.016	85.478	65.349	48.773	41.218
Dambovita	188.575	176.747	158.027	136.667	111.501	81.128
Giurgiu	78.130	77.331	60.667	43.732	29.279	21.612
Ialomita	94.576	90.933	89.963	79.117	66.772	54.851
Prahova	190.648	175.770	149.970	112.765	98.350	83.120
Teleorman	215.751	230.089	217.331	189.323	154.637	118.010
TOTAL	1.053.446	1.011.023	909.914	757.328	617.681	493.207

Source: National Institute of Statistics in Romania

Regarding the number of unemployed registered in the South-Muntenia region, there is a gradual decrease in the analysed time interval. At the same time, the job vacancies within the region located in the south of Romania report a much smaller number than the total unemployed (Table no. 1). This aspect certifies the hypothesis that the research should be developed at the level of each qualification of the registered unemployed, to place them in the labour force. Within the above-mentioned region, there has been a decrease in the number of unemployed for each county, and therefore at the regional level. At the same time, according to Annex no. 2, the share of unemployed in the analysed region compared to the national level is about 17.5%. Since there are eight development regions at national level, we consider this aspect decisive regarding the importance of this area in the Romanian economy.

Table no. 4 Unemployed registered in the North-East region

COUNTY	YEAR					
	2014	2015	2016	2017	2018	2019
Bacau	179.171	171.145	171.490	160.156	156.861	135.478
Botosani	91.749	84.799	87.056	72.249	51.312	46.059
Iasi	183.234	167.005	157.530	153.796	123.593	102.978
Neamt	143.535	141.291	131.073	121.884	109.158	91.140
Suceava	190.040	190.826	174.905	142.416	144.196	134.516
Vaslui	207.328	200.738	199.471	183.576	145.852	126.313
TOTAL	995.057	955.804	921.525	834.077	730.972	636.484

Source: National Institute of Statistics in Romania

In the North-East development region there is a gradual decrease during the period 2014-2019 on the number of unemployed (Table no. 4). At the same time, the job vacancies within the region from north-eastern of Romania report a much smaller value than the total unemployed (Table no. 2). This aspect certifies the hypothesis that the research should be developed at the level of each qualification of the registered unemployed, in order to include them in the labour force. Certainly, this decrease in the number of unemployed is also determined by other factors such as mortality or maintaining and increasing the level of voluntary unemployment. However, despite the number of job vacancies, we believe that they can be supported by involuntary unemployment, but also by the implementation of policies to reduce voluntary unemployment. Within the North-East region, there has been a decrease in the number of unemployed for each county, and therefore at the regional level. At the same time, according to Annex no. 2, the share of unemployed in the analysed region compared to the national level is about 18.4%. Since there are eight development regions at national level, we consider this aspect decisive regarding the importance of this area in the Romanian economy.

Conclusions

The most inhabited development regions in Romania, South-Muntenia and North-East, represent a potential still untapped for current and future entrepreneurs. In this sense, the

number of job vacancies represents only about 1.17% of the total unemployed, which indicates the hypothesis that this research should be developed at the level of each qualification of registered unemployed, in order to include them in the labour force. If there will be trades with an oversupply of labour force, we propose the creation of qualification courses to other fields, to cover the existing deficit on the labour force to other economic activities. Based on the analysis above, it was found that there is a decrease in the number of unemployed, possibly caused by factors such as mortality or maintaining and increasing the level of voluntary unemployment. However, the number of job vacancies, we consider, can be supported by involuntary unemployment, but also by the implementation of policies to reduce voluntary unemployment. Moreover, the biggest demand from entrepreneurs comes to the area of the manufacturing industry, a field that often accepts unskilled personnel. If in the analysed time interval, the level of unemployment is on a decreasing trend, the number of job vacancies registers an increase, reaching the maximum value in 2018, where the value of 60,586 was reported. In conclusion, the two development regions are currently facing a high level of unemployment, compared to the job offer, which shows that there are some dysfunctions at the regional level regarding, probably, the way of tendering made by the current entrepreneurs but also the lack of government policies to diminish this high level of unemployment.

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Annex no.1: Job vacancies in Romania

Activities of the Romanian economy	YEAR					
	2014	2015	2016	2017	2018	2019
	NUMBER					
A. Agriculture, forestry and fisheries	382	611	606	637	634	755
B. Extractive industry	101	83	100	80	66	127
C. Manufacturing industry	10.711	13.685	15.793	15.756	16.403	13.304
D. Production and supply of electric and thermal energy, gases, hot water and air conditioning	98	113	297	365	300	293
E. Water distribution; sanitation, waste management, decontamination activities	803	1.094	1.068	1.094	1.269	1.279
F. Constructions	1.147	1.479	1.623	1.821	2.412	2.398
G. Wholesale and retail trade; repair of vehicles and engines	2.949	4.656	5.216	5.075	5.641	6.269
H. Transport and storage	1.650	2.568	2.686	3.323	4.567	4.061
I. Hotels and restaurants	439	540	1.141	866	1.133	1.380
J. Information and communications	939	1.668	2.257	2.027	2.946	2.462
K. Financial and insurance intermediaries	790	864	1.253	1.435	991	708
L. Real estate transactions	98	135	151	128	184	106
M. Professional, scientific and technical activities	818	1.124	1.499	1.602	1.624	1.330
N. Administrative services activities and support services activities	1.841	1.943	2.901	2.858	2.574	2.851
O. Public administration and defense; social insurance in the public system	6.455	8.158	9.685	8.695	7.612	6.200
P. Education	2.619	2.471	2.500	2.473	2.701	1.480
Q. Health and social assistance	4.881	6.451	8.461	9.197	6.948	6.452
R. Performance, cultural and recreational activities	814	1.272	1.454	1.430	1.206	1.206
S. Other service activities	988	1.037	1.062	1.125	1.375	1.160
TOTAL	38.523	49.952	59.753	59.987	60.586	53.821

Source: National Institute of Statistics in Romania

Annex no. 2: Unemployed registered in Romania

Development region	YEAR					
	2014	2015	2016	2017	2018	2019
Northwest Region	566.718	509.367	467.007	438.818	352.233	306.523
Center Region	726.176	684.146	576.500	496.847	399.004	340.825
North-East Region	995.057	955.804	921.525	834.077	730.972	636.484
South-East Region	832.693	830.482	799.202	739.688	578.478	504.913
South-Muntenia Region	1.053.446	1.011.023	909.914	757.328	617.681	493.207
Bucharest-Ilfov Region	300.208	282.764	261.066	241.138	222.257	196.949
Southwest Oltenia Region	884.986	874.980	823.114	760.816	623.230	537.043
West Region	350.192	321.391	264.291	227.086	196.947	177.547
TOTAL	5.709.476	5.469.957	5.022.619	4.495.798	3.720.802	3.193.491

Source: National Institute of Statistics in Romania

CORONAVIRUS PANDEMIC – LEVERAGE FOR CYBERCRIME

Daniel Dumitru¹ and Tiberiu Ion²

^{1) 2)} *Carol I National Defence University, Bucharest, Romania*

E-mail: dumitru.daniel@unap.ro; E-mail: ion.tiberiu@unap.ro

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Abstract

The global Coronavirus pandemic has not only a social impact, by causing infections and deaths, but it has also shaped the economy at a global scale, having the potential to close entire cities or regions by installing quarantine, bankrupt small or unsustainable business, rise to commercial shortage certain industries, while causing a dramatic fall for others.

The current paper illustrates how the coronavirus pandemic influenced different sectors causing the transition of certain activities to the virtual space. Cyberspace is not immune to these fast changes: public and private organization are now being forced to implement remote working solution for their employee. In this sense, the internet usage has increased exponentially. Thus, understanding the impact of the online transition and analysing the potential threats and their causes, is a crucial task for organisations in order to not be vulnerable to cyberattacks. As more and more users, with no basic knowledge in cyberdefence, are using public networks to pass sensitive information, cybersecurity has become more important than ever. Therefore, the current research outlines a set of cyber due diligence and cyber due care strategies that represent good practices for organisations in the context of crises.

Keywords

Global crises, digital policies, cyberattacks, due diligence, due care

JEL Classification:

F02, F60, O21, O33

Introduction

Global crisis, from climate change to the global war on terror, from world poverty to humanitarian disasters, represent the dark side of the globalised planet, and, increasingly, prompt awareness of our civilizational community of fate (Cottle, 2009). The outbreak of COVID-19 has determined a major shift for the modern society, trends like social distancing or self-isolation being recommended and in certain cases imposed. In an attempt to identify and understand the turmoil effect that the pandemic has on the society and all its main sectors and industries, the current paper tries to summarize how the impact –

response relationship evolved during the first months of this crises and how did this crises impact cyberspace and cybersecurity for both public and private organizations.

The aim of this paper is to better understand how a four pillar model based on cyber due diligence and cyber due care strategies can help end users represented by teleworkers to protect the information that they disseminate, using cyberspace channels. By implementing these recommendations, each organization can take an extra step in adjusting the negative economic effects of the pandemic. Nevertheless, these good practices can be also learned and adapted for certain daily activities of each individual, as normal life as we know will slowly migrate to the online environment and will be hosted in a space with no boundaries.

1. Analysing the social impact of Coronavirus crisis and the response of public and private sectors

The year 2020 has begun with a crisis situation, caused by the Coronavirus pandemic, that raised a series of challenges for the entire world. Excepting Antarctica, the pandemic has affected all social and economic sectors on all continents. Governments are racing to stop or to slow down the spread of the virus by any means necessary. Much of the world's states have declared state of emergency, imposing a series of strict measures like closing schools, banning congregations, limiting traveling or social activities or even placing quarantine restrictions/isolation at home for citizens.

The rapid spread of COVID-19, the coronavirus disease, has also a major political impact, raising old tensions between nations and raising the risk of security threats. From an economical point of view, major economic powers like the United States of America (USA) or China are becoming less significant as international trade is slowing down, while the European Union is facing a major economic lockdown for some of its strongest members. In this context, it can be said that the globalisation process has reached a standstill.

In the coming months the world is expecting to see changes in the way society will operate and how will the normal life look like. As governments and businesses around the world tell those with symptoms to self-quarantine and everyone else to practice social distancing, remote work is our new reality (Neeley, 2020).

Governments have also a major role in limiting as much as possible the social impact of this crisis, especially by taking the necessary actions in order to assure critical supplies and prioritise vital resources for the population. This means economic measures that can include export limitation for certain products, price-cap regulations, unemployment policies. Furthermore, the effect of *panic buying* is creating shortages in the logistic chains for goods of strict necessity (food, water, personal hygiene products etc.)

On the other hand, if certain categories of good are impacted by high demands, a powerful contraction in demand is registered for industrial production and construction (Laing, 2020). Thus, the pandemic has caused dramatic falls in the prices of a wide range of products, for example metals and construction materials, even stock market shares. According to the World Economic Forum, the world stock market has dropped up to 40% by the end of March 2020, this evolution having a negative impact of multiple big companies (Figure no. 1).

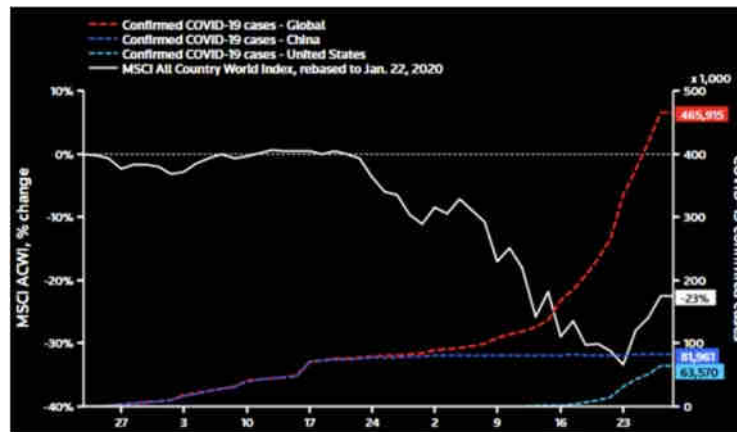


Fig. no. 1 World stock market vs COVID-19 confirmed cases

Source: World Economic Forum, <https://www.weforum.org/agenda/2020/03/take-five-quarter-life-crisis/>

Moreover, social distancing and isolation have blocked main public sector activities that are directly related with the companies and organizations and their economic activity. Thus, in the context of social distancing, the need to implement and deploy digital technologies is rapidly growing, as the chain reaction public - private – population has determined a significant reduction in demand of goods and services across March and April 2020.

But switching to online is not an easy task and it cannot be achieved in a very short period of time. Also, the lack of specialized human resources in information technology represents a challenge for this transition. Governments must act and create partnerships between private technology companies, international organizations and other social entrepreneurs in order to facilitate the online migration of ministries, public accreditation bodies or other institutions which carry out important activities for the society.

For example, digital technologies, as artificial intelligence software, can be helpful in the healthcare services, by improving emergency communications when their capacity is outpaced, or in overcoming language barriers. Based on multiple economic analyses, The Department of Economic and Social Affairs from the United Nations (UN) has developed a model that illustrates a digital government policy response to Covid-19 (Figure no. 2).



Fig. no. 2 Digital Government Policy Response to Covid-19

Source: adapted after United Nations, 2020

Public-private partnerships will be reshaped during this pandemic crisis. There is now an opportunity to reevaluate and redesign the term *normal*, in order to streamline processes,

actions and maximize the added value of the results. During this crisis, Apple and Google (Apple, 2020) announced a collaboration that involves a common investment of their resources (capital, human, know-how) in order to find a technical solution that can help governments and health agencies to reduce the spread of the virus. The two multinational technology companies are working to provide a cross-platform of application programming interfaces (API) that application developers can use in order to implement contact localization and tracing.

Also, other big companies are trying to assist the public sector in fighting the crises (Atlassian, 2020): CenturyLink, provides high-speed internet to temporary hospitals around US; HP provides 3D printing technology for COVID-19 face shields, face masks, wrists covers; Facebook is allocating funds towards fact-checking of information, in order to avoid the spread of misinformation. Other big corporations announced donations in IT infrastructure in order to facilitate remote education (Amazon, 2020). Furthermore, as of March 30, more than 6.000 contributors have provided support to more than 3.000 COVID-19 response projects worldwide. Most of these projects are hosted on GitHub, a Git repository hosting service.

Thus, the positive response of both big companies and small businesses in offering support to the governments has once more demonstrated that the public sector and international organizations will not overcome this crisis alone. In this sense, social responsibility and ethics will bring businesses one step forward in adapting to the society that will follow post COVID-19 pandemic. Nevertheless, digitalization together with related products and services will become a necessity for the public and private sectors around the world.

2. The need of digitalization in the context of Cybercrime: prevention and good practices

As countries and organizations stand together in facing the new challenges determined by the coronavirus crisis, another threat is escalating with the need of transition to online, and that is the cybersecurity threat. The same cyberthreats or hacking strategies can be tracked prior to this crisis, but in the last month an increase in social engineering targeting was registered, by leveraging vulnerabilities caused by the present crisis.

Social engineering is an incredibly effective process of attack with more than 80% of cyberattacks, and over 70% of those from -nation-states, being initiated and executed by exploiting humans rather than computer or network security flaws (Erbschloe, 2020).

In order to assure social distancing and prevent the spread of the virus, governments and companies have established measures to isolate its workforce and to offer technical solutions to accomplish their tasks remotely. In this context, the use of the internet and social media applications have increased exponentially.

Home internet access does not always ensure a secure connection and can determine network vulnerabilities, that can be easily used by cyber perpetrators in order to get access to sensible data. Moreover, these technical vulnerabilities are increased by the consequences that people are facing because of the coronavirus pandemic and their constant search for information on the subject, that has been widespread on the social media. This causes people to take fast actions on social media applications, in cases they otherwise might have been circumspect.

Society has heightened the dependency for information technology and individuals whom were not technical by formation, are now forced to adapt and embrace this new technique of communication, without any advising in cyber security knowledge. In this context, cyberattacks will target both individuals and organisations, as teleworkers will facilitate a direct connection to their employers' systems.

All of these factors can cause an increase in the number of attempts of cyber criminals. Taking the advantage of the current crisis, cyberattacks can even cause the closure of an hospital. According to Europol (2020), the Czech Republic reported a cyberattack on Brno University Hospital which forced the hospital to shut down its entire IT network, postpone urgent surgical

interventions and re-route new acute patients to a nearby hospital. According to Europol, in the first months of the current crises.

According to the Center for Internet Security (2020), a non-profit organization that leads communities for enabling an environment of trust in cyberspace, starting with the beginning of the current crisis, an increase in following specific types of attacks has been registered:

- phishing and malspam,
- credential stuffing,
- ransomware,
- remote desktop protocol (RDP) targeting,
- distributed denial of service (DDoS) attacks.

Thus, in order to prevent attacks, organizations must adopt a comprehensive strategy based on cyber due diligence and cyber due modules, that must be further implemented by the end user, in this case the teleworker. These modules represent a set of good practices that can help both organizations and employees to better adapt to the transition towards the online or remote environment. In this sense, a model has been outlined (Figure no. 3), based on all 4 main strategies that must be adopted by an organization - due diligence of the organization, due care of the organization, due diligence of the end user, due care of the end user. The model contains a collection of one of the most important and best applied good practices, that have been correlated in a logical way.

Education represent the starting point for preventing, or in the worst case, correcting all security problems. Companies must organise cybersecurity courses for all employees, in order to teach them the basic knowledge regarding cyberspace and threats. The actual situation represents an alarm trigger for the organizations that did not consider cybersecurity as a resource in defending the company's online environment.

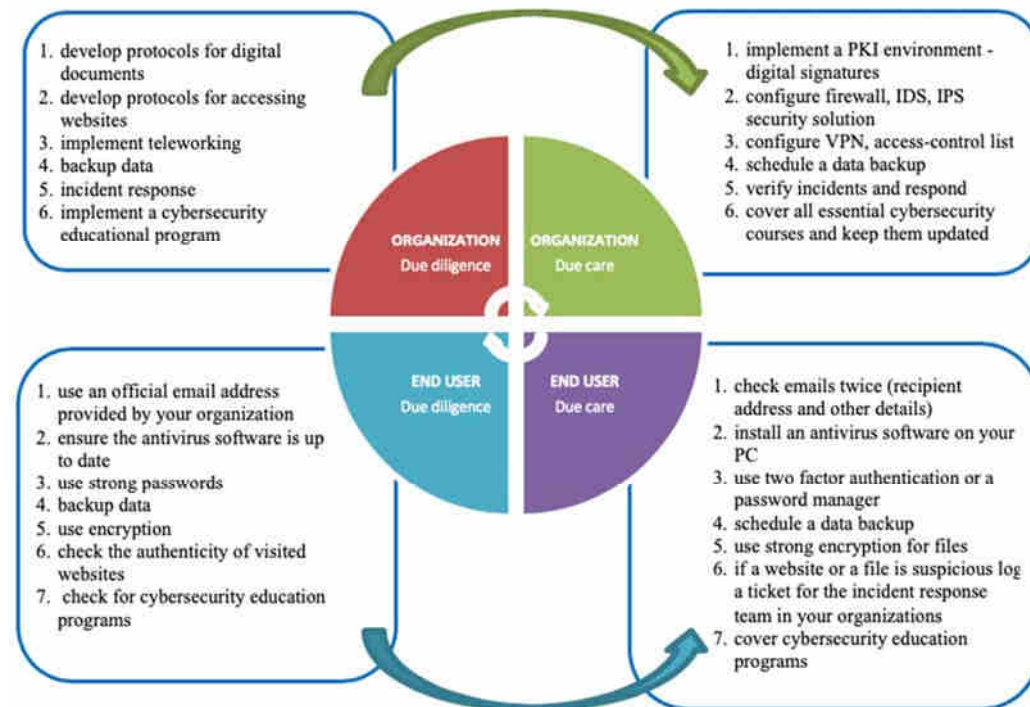


Fig. no. 3 Good practices in the context of crises: modeling cyber due diligence and cyber due care strategies

Source: author research

Thus, according to the above model, in order to provide the most extensive coverage through cybersecurity specialists, organisations must offer cyber due diligence and cyber due care modules to help assess and address information security risks. The main outcome is that a company will implement information technology solutions and that employees will have the necessary resources to use. In this sense, active and proactive technologies (for example: Virtual Private Network – VPN, Intrusion Detection System – IDS Intrusion Prevention System – IPS, PKI – Public Key Infrastructure) will be used by teleworkers in order to maintain network security.

Moreover, public and private organizations should adapt to the dynamic evolution of the information technology and its increasing dependency by creating a special structure of cybersecurity specialists. With the help of these specialists, organizations can develop security policies for preventing the leak of sensitive information or cyberattacks. Employees will also have an important role in maintaining a secure online environment by respecting the due diligence and due care strategies.

Conclusions

The current Covid-19 crises could become the most significant economic, political and social event to characterize the twenty first century. Actions and measures that are trending at a global level have already shaped the global economy, increasing or decreasing the demand in different sector and industries, causing logistic shortages and long-term implications for the post-pandemic society. Fear of a new recession caused by an increasing unemployment level, by falling wages, or fail of measures that might be placed to help the economy can determine a general state of panic and uncertainty, corroborated with the transition to online of multiple business or individual activities, creates a fair environment that can facilitate the occurrence of cyberattacks, as an social and economic consequence of the Covid-19 pandemic.

Analysing the social impact of the Coronavirus crisis and the response of public and private sectors is a crucial step for governments, organisations and academia in order to understand future trends and implications for communities and countries.

In short term, in order to promote social distancing for avoiding the spread of the virus, most governments, organisations, companies and even the individual must transition to the online environment. This transition calls for caution and awareness from all involved parties as remote work being a new reality, brings a number of risks for both the organisation (whether public or private) and the end user.

In this sense, cyber due diligence and cyber due care models are one of the best practices that organisations can implement. The current model shows the basic steps that an organisation and its end users must follow in order to maintain a safe online environment. The four pillar model is resilient and calls for ensuring basic knowledge of cybersecurity and cyberspace regardless the domain that the organisation operates in (healthcare, business, production, constructions, government or social activities).

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DETECTING PLANT DISEASES USING DEEP LEARNING ARCHITECTURES

Lucian Vilcea¹ and Marian Dârdală²

^{1) 2)} The Bucharest University of Economic Studies, Romania

E-mail: lucian.vilcea@ie.ase.ro; E-mail: dardala@ase.ro

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Abstract

The technological advancements in artificial intelligence enabled the usage of complex mathematical models in various fields, such as agriculture. Not long ago, the only method of detecting certain abnormalities in the development of a plant was the trained eye of an expert. Today, we can make use of deep learning techniques to precisely identify these problems. For a multitude of crops, the abnormalities in the development of the plant can be identified by carefully analyzing the health of the leaves. In this paper, we make use of a public leaf disease dataset to identify 2 different diseases commonly found on potato leaves, namely the early blight and the late blight. Using GoogLeNet's Inception-v3 convolutional neural network (CNN) architecture, we trained the model using a total of 6456 images, of which 456 were depicting healthy leaves. 5166 images were used for training, while 1290 were used for validation. The network was trained 3 times, using fully colored, grayscale and segmented images. The achieved overall accuracy range between 93.48% for grayscale images and 97.67% for segmented images.

Keywords:

Convolutional Neural Networks, potato leaf diseases, Inception-v3, Deep learning

JEL classification:

Q10, Q16

Introduction

With the continuous increase of the world's population, the need of sustainable food sources is greater than ever. The overall health of crops has a major impact on the world economics, as losses in food production due to diseases can sum up to important amounts. Nowadays, the potato (*Solanum Tuberosum*) is one of the most cultivated vegetables in the world. With its origins in South America, the potato is cultivated worldwide, the total world production in 2018 being of 458.490.361 metric tons. China, India, Ukraine, Russian Federation and USA are the biggest potatoes producers. In 2018, Romania produced a quantity of 3.022.758 tons of potatoes, being ranked 10th in Europe and 25th in the world. It is also the 4th most important crop in the country, after maize, wheat and sunflower. The total surface of land cultivated

with potatoes was 173.296 ha (FAOSTAT, 2020). However, an important amount of these crops is lost due to inadequate farming procedures, dysfunctional cultivation practices and the increasing number of diseases that are affecting the potato plant leaves.

Not long ago, the only way of identifying a disease in a plant was the trained eye of an experienced farmer. However, this process was not very efficient, the manual process requiring a lot of time and knowledge. Plant pathologists were needed to properly classify these diseases. Also, an important role in the proper development of the crops is represented by a predictable and suitable climate for the development of the cultivated plants. However, the climate conditions are changing drastically year over year, with prolonged periods of drought, as well as heavy rains and storms, destroying large areas of cultivated fields. (Istudor et al., 2019). Today, computer-aided systems can automate this process by scrutinizing the visual symptoms and categorizing diseases. Early identification of abnormalities in plant development contributes significantly to the increase of the potato production, both qualitative and quantitative, as well as preventing the disease outbreaks. (Bazgă, Olteanu and Chira, 2019). Still, most of the Romanian young farmers with lower incomes are perceiving technological advancement in the agricultural field as a threat to the development of their businesses, since the traditional methods they apply are less expensive. (Cristea et al., 2019). This study focuses on detecting and classifying potato leaf diseases based on the visual patterns and symptoms specific for each disease, using advanced computer vision techniques, like convolutional neural networks. While there are a multitude of pathogens that can cause diseases in the potato crops, this study focuses only on early blight, as well as late blight, the only limitation being the data that could be acquired. Further extensions to the present study are possible, given the availability of meaningful data to feed the proposed model.

Early blight

Early blight is a fungal disease caused by *Alternaria solani* pathogen, commonly found in tomato and potato crops. Despite its name, the early blight develops usually on mature foliage. Left uncontrolled, the disease can lead to complete defoliation of the plant.

Alternaria solani is a fungus that is naturally present in the fields where potato has been grown. It resides both in the soil, as well as in the plant's stem or leaves. The spores are easily carried by air currents, splashing rain or even irrigation water. It develops quite fast in the mid-season, under warm, humid weather conditions and spreads even faster when plants are lacking proper nutrition or are affected by other pests or drought.

On potato, the disease is characterized by small, dark brown or black and irregular lesions, ranging in size up to 1.5cm. On larger lesions, a concentric pattern can be observed. When the lesions are numerous, they may grow together, causing the leaves to turn yellow and die. (UMASS, 2013)

Late blight

Late blight, also known as potato blight, is a disease caused by *Phytophthora infestans*, a eukaryotic microorganism found mostly in moist and warm environments. Usually, the disease develops on the lower foliage of the plant, as well as on the tubers. The full lifecycle of the fungus can be completed in as short as 5 days.

Originating from Mexico, late blight is responsible for the death by starvation of over one million people in Ireland between 1845 and 1852. Also, during the First World War, due to the lack of copper sulfate on the market led to a new late blight outbreak, 700.000 German civilians dying from starvation. (Njoroge et al., 2019)

At leaf level, the disease can be identified by the large, dark brown blotches with a green edge. In high humidity conditions, the leaves are covered with a thin, powdery white fungal coat. (UMASS, 2013)

Fig. no. 1 shows the visual symptoms of potato leaves affected by *Alternaria solani* and *Phytophthora infestans*.



Fig. no. 1 Potato leaves infected with *Alternaria solani* (left) and *Phytophthora infestans* (right)

The dataset

The image dataset used for this paper is provided as a Git repository (Github, 2018) known as PlantVillage Dataset. From this image collection, only the images depicting potato leaves, both healthy and ill, are selected. The images are grouped into 3 categories: colored, grayscale and segmented. The segmented images are part of the dataset itself, depicting the same color image, but with the background removed. In this way, we improved the quality of training, eliminating unnecessary noise from the images. Figure 2 shows the same leaf into these 3 different states.



Fig. no. 2. Leaf infected with *Alternaria solani*: fully colored (left), grayscale (center), segmented (right)

There are 2152 images in each category: 152 images of healthy leaves, 1000 images of leaves infected with early blight, while other 1000 images represent leaves infected with late blight. The total number of 6456 images are used. The dataset is split into training and testing images, using an 80%-20% ratio, as shown in Table 1. The images are stored as JPG files, having a resolution of 256x256 pixels.

Table no. 1 Distribution of images in the dataset

Type	Healthy		Early blight		Late blight		TOTAL
	Training	Test	Training	Test	Training	Test	
Colored	122	30	800	200	800	200	2152
Grayscale	122	30	800	200	800	200	2152
Segmented	122	30	800	200	800	200	2152

GoogLeNet Inception-v3

For the proposed paper, we used the GoogLeNet deep convolutional neural network architecture, codenamed Inception. Being the winner of ILSVRC (ImageNet Large Scale Visual Recognition Competition) in 2014, Inception-v1 used a deeper model than its principal competitors, AlexNet, ZFNet and VGGNet. In 2015, the overall architecture was redesigned, as described in Table 2, being the 3rd version of GoogleNet's CNN. (Szegedy et al., 2015)

The network architecture of GoogLeNet versions are different from VGGNet, ZFNet and AlexNet. GoogLeNet uses a technique called inception module, which consists into different sizes of convolutions for the same input, while stacking all the outputs. For this reason, it uses a lot less parameters than previous architectures, while increasing the accuracy of the predictions. (Szegedy et al., 2015)

Table no. 2 Inception-v3 architecture details

Parameter	Inception-v3
Number of operations	12 million
Convolution filter size	1x1, 3x3 – previous 5x5 filters in Inception-v1 were replaced with two 3x3 filters
Layers	42
Auxiliary classifiers	1
Top accuracy	78.8%
Speed	With 42 layers deep, it's only 2.5 slower than the 22-layer architecture of Inception-v1 and much faster than VGGNet

Source: Jahanadad, S. et al, 2015

Training methodology

The architecture described in Figure 3 was coded using C#, ML.NET and TensorFlow.NET, the Microsoft implementation over Google's Deep Learning System, TensorFlow. The development and testing were performed on a local machine, featuring an Intel® Core™ i5-4330 CPU, 16GB DDR3 2133MHz RAM and a 2.5" SATA III 1TB SSD.

The project refers to the design and implementation of an offline leaf disease classification system that can classify images of potato leaves into 3 categories: healthy, infected with early blight and infected with late blight. The dataset is labeled using regular file processing with C#, resulting into two CSV files, containing the filename and the class for each image. Then, the dataset is fed into CNN architecture Inception-v3, using L-BFGS (Limited-memory Broyden-Fletcher-Goldfarb-Shanno) maximum entropy algorithm as the trainer for multiclass classification.

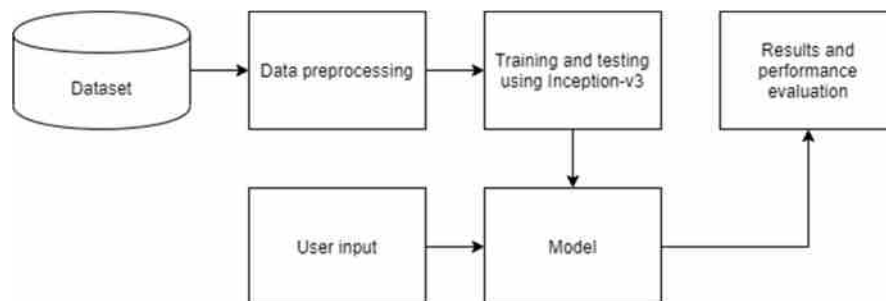


Fig. no. 3 Model diagram of the proposed system

The code below explains how the Inception-v3 pipeline was configured, as well as the process of training and evaluating the resulting model.

First of all, we created a pipeline that will run all the steps sequentially, then set the data source for the pipeline with our local path. After that, we resized the images to the required size of 224x224 pixels and fed them to the Inception model.

```
MLContext mlContext = new MLContext();
IEstimator<ITransformer> pipeline =
    mlContext.Transforms.LoadImages(outputColumnName: "input",
        imageFolder: _imagesFolder, inputColumnName:
        nameof(ImageData.ImagePath))
    .Append(mlContext.Transforms.ResizeImages(
        outputColumnName: "input",
        imageWidth: InceptionSettings.ImageWidth,
        imageHeight: InceptionSettings.ImageHeight,
        inputColumnName: "input"))
    .Append(mlContext.Transforms.ExtractPixels(
        outputColumnName: "input",
        interleavePixelColors: InceptionSettings.ChannelsLast, offsetImage:
        InceptionSettings.Mean))
    .Append(mlContext.Model.LoadTensorFlowModel(
        _inceptionTensorFlowModel)
    .ScoreTensorFlowModel(
        outputColumnNames: new[] { "softmax2_pre_activation" },
        inputColumnNames: new[] { "input" }, addBatchDimensionInput: true))
```

We then mapped the CSV field storing the label for each image to the classes that the model will use to classify the input. As activation function, we used the LBFGS maximum entropy algorithm.

```
pipeline.Append(mlContext.Transforms.Conversion.MapValueToKey(
    outputColumnName: "LabelKey",
    inputColumnName: "Label"))
    .Append(mlContext.MulticlassClassification.Trainers
        .LbfgsMaximumEntropy(
            labelColumnName: "LabelKey",
            featureColumnName: "softmax2_pre_activation"))
    .Append(mlContext.Transforms.Conversion
        .MapKeyToValue("PredictedLabelValue", "PredictedLabel"))
    .AppendCacheCheckpoint(mlContext);
IDataView trainingData = mlContext.Data.LoadFromEnumerable<ImageData>(
    ReadFromCsv(_trainTagsCsv, _imagesFolder));
```

In the end, we started the training process of the model and generated the predictions.

```
ITransformer model = pipeline.Fit(trainingData);
IDataView testData =
    mlContext.Data.LoadFromEnumerable<ImageData>(
        ReadFromCsv(_testTagsCsv, _imagesFolder));
IDataView predictions = model.Transform(testData);
IEnumerable<ImagePrediction> imagePredictionData =
    mlContext.Data.CreateEnumerable<ImagePrediction>(
        predictions, true);
MulticlassClassificationMetrics metrics =
    mlContext.MulticlassClassification.Evaluate(
        predictions,
        labelColumnName: "LabelKey",
        predictedLabelColumnName: "PredictedLabel");
```

Accuracy validation

Table 3 shows the results obtained from training the Inception-v3 CNN on the 3 types of images. The dataset size was identical for all 3 processes, containing 2152 images, sized 256x256 pixels. Figure 4 shows the comparison between the results obtained for the processes.

Table no. 3 Experimental results for healthy (H), early blight infected (EB) and late blight infected (LB) leaves

Set	Disease	Dataset		Results				Accuracy (%)	Log loss	Compute time (seconds)
		Training	Test	Correct	Incorrect, predicted as					
					H	EB	LB			
Color	H.	122	30	25	-	0	5	97.20	0.0727	116.12
	E.B	800	200	198	0	-	2			
	L.B.	800	200	195	3	2	-			
	TOTAL	1722	430	418	3	2	7			
Segmented	H	122	30	27	-	0	3	97.67	0.0624	121.47
	E.B.	800	200	199	0	-	1			
	L.B	800	200	194	4	2	-			
	TOTAL	1722	430	420	4	2	4			
Grayscale	H.	122	30	20	-	0	10	93.48	0.211	118.55
	E.B.	800	200	197	0	-	3			
	L.B.	800	200	185	7	8	-			
	TOTAL	1722	430	402	7	8	13			

Inception-v3 performed the best in the case of segmented images, the overall accuracy being of 97.67%. On the other side, the lowest performance was recorded on the grayscale images, the overall accuracy being of 93.47%, while the log loss raised up to 0.211. The computation time for each category is comparable.

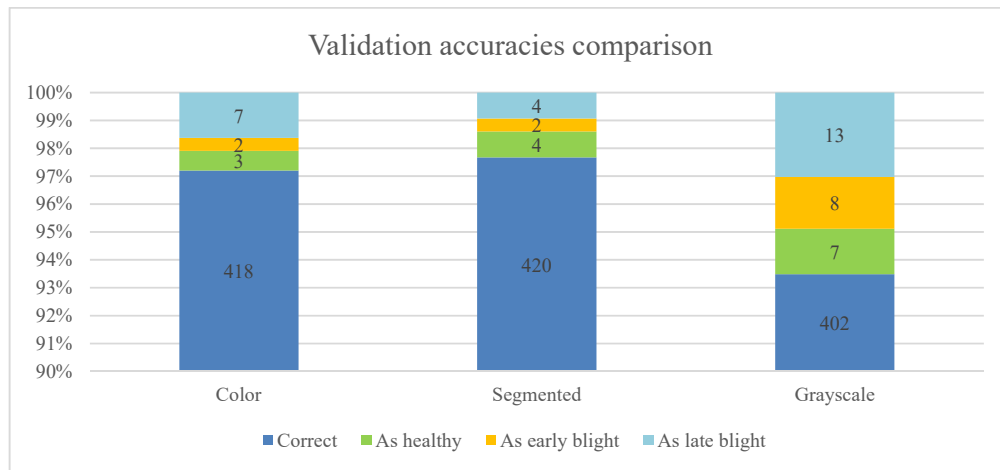


Fig. no. 4. Comparison between incorrect results on different types of images

Conclusions

Nowadays, the ongoing expansion of agricultural activities due to the constant increase in population requires new methods of making the crops monitoring easier and more effective. The lack of skilled workforce, the large areas of land that needs monitoring and the sanitary

crysis that the world is facing today, which forces the workers to apply strict security norms are making this process even more difficult.

This paper proposes a classifier system based on GoogLeNet's Convolutional Neural Network architecture Inception-v3 to identify the existence of 2 main potato crops diseases, the early blight and the late blight. The development of the system was made on a local machine, using C#, ML.NET and TensorFlow.NET. The L-BFGS maximum entropy algorithm was used as the trainer function.

A total number of 6456 images were used to train 3 different models, comparing the results obtained by different means of preprocessing the data. The best outcome was obtained using images that had the background removed, while keeping the RGB channels intact, with an accuracy score of 97.67%. On the opposite end, grayscale images resulted in the least performance, the results being, however, satisfactory, with an accuracy score of 93.48%.

Further improvements guided by this work are to use different trainer functions, like SDCA (Stochastic Dual Coordinate Ascent) maximum entropy algorithm, OvA (one-versus-all) or Naïve Bayes. Furthermore, more advanced CNN architectures like Inception-v4 or Inception-ResNet may be used to increase the overall performance. Finally, more images can be added to the current dataset, expanding the range of diseases identifiable by the system.

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MINING SOCIAL MEDIA TO IDENTIFY THE IMMEDIATE IMPACT OF COVID-19 PANDEMIC ON THE ROMANIAN RETAILERS: EARLY FINDINGS

Adriana Reveiu¹ and Denis-Cătălin Arghir²

^{1) 2)} The Bucharest University of Economic Studies, Romania

E-mail: reveiua@ase.ro; E-mail: denis.arghir@ie.ase.ro

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Abstract

Social media provides comprehensive support, frequently used by customers to share opinion about products and services, shopping experiences and expectations.

This paper proposes a framework for data acquiring and mining to identify immediate impact of Covid-19 pandemic on the main retailers acting in Romania, as it is expressed by customers' posts published on Twitter social network. A comparative analysis with the year before the pandemic outbreak is included, to assess transformations and challenges generated by the pandemic crisis as they are reflected in customers' messages posted on social media.

Keywords

Social media, retailing, text mining, Twitter, machine learning, Covid-19 crisis, sentiment analysis

JEL Classification

L81, C45, C55

Introduction

Covid-19 pandemic has deeply impacted on people's lives and undeniably has disturbed the global economy. While the long-term impact of this crisis is yet to be established, its immediate impact on retailing is significantly (Roggeveen, 2020), and it is discoverable by mining social media.

Merchants of indispensable goods such as food, healthcare products and groceries have experienced increased opportunities, being request to manage a larger volume of orders and to serve consumers at home, withal they have faced new challenges like inventory, supply chain management, delivery (Roggeveen, 2020), but keeping their environment safe. On the other hand, retailers of non-essential goods are experiencing a significant decline in sales and are pushing to identify new solutions to reach and retain customers, just to survive themselves. As more people have migrated online because of the pandemics, the volume of cyber activities

has skyrocketed. More than ever before, customers have shared their opinion, thoughts and practices about their online and in-store shopping experiences by social media.

In this context, the aim of this paper is to create an overview of the main topics approached during pandemic crisis, concerning the main retailers and wholesale traders operating in Romania in contrast with the year before pandemic outbreak. This paper proposes a framework for acquiring and mining Twitter messages (tweets) and applies it in the Romanian context, to identify the most frequently topic of interest, their geographical distribution and customers' sentiments as they infer from customers' messages published online.

Literature review

As social media platforms like Twitter, Facebook, Instagram and YouTube provide mechanism for dynamically collecting data on human behaviour and sentiment, they have been proved useful in a variety of economic fields, to study stock market prices (Si et al, 2013), unemployment, economic indicators in real-time (Poza and Monge, 2020), and consumers' profile (Yelowitza and Wilsona, 2015), to discover emerging business ideas (Lee and Shon, 2019), among others.

Along with digital retailing and advertising, sentiment analysis, service performance measurement and outcomes, social media mining is a major research topic in contemporary retail setting (Souiden et al., 2019). Social media mining has been used in retailing, so far, to reveal popularity of a specific product (Anwar Hridoy et al., 2015), to measure the impact of online retailers' engagement on the brand image and service perception (Ibrahim et al., 2017), to analyse the use of Twitter in supply chain contexts (Chae, 2015), to setup sustainable business models (Onete et al., 2013) or as an effective mean to reach customers (Pop et al., 2019). However, to the best of our knowledge no paper has investigated how the challenges generated during a pandemic crisis have impacted retailers and how their actions have been reflected through the lens of customers messages. This paper tries to fill this gap, aiming to discover the impact of pandemic crisis on customers' topics of interest as reflected from Twitter messages about the main retailers operating in Romania.

Twitter is a micro-blogging platform in which users broadcast hundreds of millions of brief messages daily (Worldometers, 2020), on different topics, being accessed daily, both from public and private locations. One major advantage of Twitter is that its messaging service can be programmatically retrieved via Twitter API (Twitter, 2020), both real-time and chronological messages, associated multimedia resources and metadata (Reveiu et al., 2008). Even if in Romania, Facebook has the most popular social network, because of its restrictions in accessing posted messages, Twitter network has been selected for this research study.

Research methodology and framework

For this research purpose top 10 retailers and wholesale traders operating in Romania were selected, based on their reported turnover in 2018, as reflected by Wall-Street (Wall-Street, 2020), namely: Kaufland, Carrefour, Lidl, Profi, Mega Image, Auchan, Metro, Selgros, Penny and Cora.

Twitter API was used for acquiring messages posted on Twitter social network, through Python programming language and Jupyter Notebook. To filtered out the appropriate messages only, some searching criteria were defined: the keywords correspond to the selected aforementioned retailer names, only texts written in Romanian language were selected, and as geolocation constrain only tweets posted from Romania were captured. An overview of data acquisition workflow is depicted in fig. no. 1.

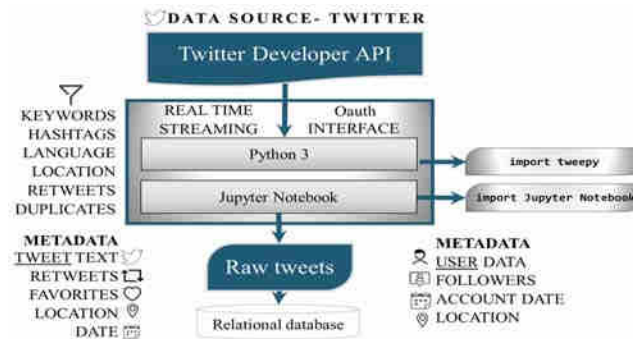


Fig. no. 1 Data acquiring workflow

Source: authors' own design

To identify the immediate impact of Covid-19 pandemics, this analysis considered two time-spans: during-pandemic period which includes the first 40 days of pandemic crisis, between 26th of February (when the first Covid-19 infected person was diagnosed in Romania) and 5 of May 2020, and the pre-pandemic period is the year before pandemic outbreak: 26th of February 2019- 25th of February 2020. The analysis was performed on each data subset allowing to figure out the changes in consumers' concerns in the pandemic time, comparing with the year before (pre-pandemic period).

After completing data collection, 1410 relevant messages were captured for the whole timespan, through Twitter API and stored in the database as raw data. The distribution of the selected tweets on retailers is included in fig. no. 2. The occurrence of retailers in customers' messages posted on Twitter generally followed their market share, as reflected by turnover and presented on the Wall-Street web site.

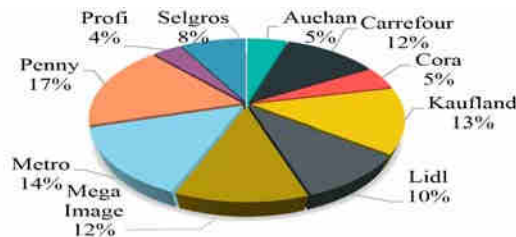


Fig. no. 2 Distribution of collected tweets on retailers

Source: authors' own design based on research results

A cleaning procedure was further applied, seeking to remove duplicate messages, emoticons, hashtags, mentions, punctuation signs, non-ASCII characters, stop words and spelling errors. After this stage, 790 tweets, with a relevant content for our analysis, have been finally identified. These were grouped into two data subsets: during-pandemic crisis with 318 messages and pre-pandemics which included 472 messages. Even if the first data subset comprised messages posted during 40 days only and the second one was almost 10 times longer (it lasts for 365 days), the number of collected tweets were nearly the same, proving the increased online activity, on social media, during pandemics.

Text mining analysis framework consists in four main steps: data clearing, natural language processing, sentiment analysis, data clusterization and generates statistically significant topics of interests, as following.

1. In order to mine the text data, a cleaning procedure was firstly accomplished, namely data were tokenized (tweets were divided into word sequences), lemmatized (brought to the

normal dictionary form) and stemmed (word suffixes were removed). To accomplish these operations dedicated Python libraries were used, as briefly depicted in fig. no. 3.

2. Natural language processing libraries were further used to mine the tweets stored in the database, having the purpose to extract the word frequency from Tweeter messages. To accomplish this step word duplicates were identified (by reducing the words to the dictionary form), the parts of the speech were determined (noun, adjective, adverb, verb), special characters were eliminated, typos were corrected, connecting words and irrelevant words were eliminated, according to the flow described in fig. no.3.

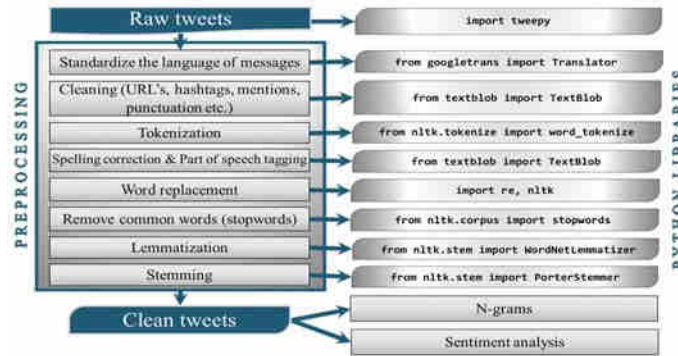


Fig. no. 3 Data cleaning and mining workflow

Source: authors' own design

3. Sentiment analysis uses automated method for evaluating customers' opinion expressed in tweets and for classifying sentiment polarity using three-way classification in: positive, negative and neutral sentiments. Sentiment analysis approached in this paper is based on the Lexicon Sentiment method. To detect sentiment polarity a dictionary of frequently used words was handled. Based on this method the messages including keywords like "good" or "advantageous" are classified as predominantly positive, and if they included words like "bad" or "terrible" the messages are considered predominantly negative.

4. Text based cluster analysis, introduced in fig. no. 4, aims to depict statistically significant topics of discussion related to selected retailers, as they are reflected by Twitter messages. Principal components analysis was firstly used to reduce the dimensionality of our datasets, whilst minimizing loss of statistically significant information. For grouping text messages based on the similarity of their content, the k-means clustering algorithm was selected. The optimal number of required clusters was established using Elbow method. Further, the term frequency is computed, to determine the frequency of word occurrence in messages normalised by their appearance in the entire corpus. Then the values were reduced in a two-dimensional space using principal components analysis.

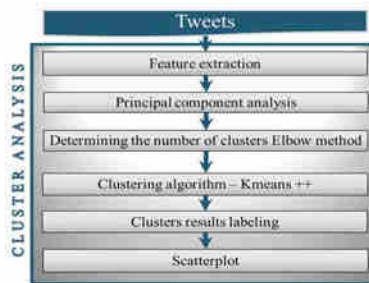


Fig. no. 4 Cluster analysis workflow

Source: authors' own design

Main research findings

This section presents the main research findings emerged by applying above-mentioned research methodology on both the pre-pandemic and during-pandemic data sets.

During the pandemic crisis, the online discussions related to the main retailers acting in Romania, namely Kaufland, Carrefour, Lidl, Profi, Mega Image, Auchan, Metro, Selgros, Penny and Cora had as authors not only customers, but also retailers, economic magazines and online publications.

In the pre-pandemic period (fig. no. 5a), more specifically the year before (26.02.2019-25.02.2020), messages posted on Twitter mostly reflected customers interest in different areas such as leisure shopping, the discussions being focused on topics related to: discounts, promotions, the use of loyalty card for various bonuses, collections of stickers and surprises for the little ones who come as bonuses for various purchased products or value amounts, and on withdrawing the plastic bags for reasons of pollution and their replacement with biodegradable bags against payment.

Fig. no. 5b presents the most often approached topics during the first 40 days of pandemic crisis (26.02.2020-5.05.2020), in association with the retailers and wholesale companies. In contrast with the previous timespan, during pandemics the discussions have focused on the online shopping experiences; home delivery of purchased goods; the partnerships between retailers and delivery companies, like FoodPanda; the use of the bank cards to pay for purchases and other utilities through the services provided by retailers, and on donations for supporting hospitals, also.



Fig. no. 5 Word clouds of the most relevant terms used by Twitter users in (a) pre-pandemic and (b) during pandemic period

Source: authors' own design based on research results

The interest was obviously focused on the new challenges generated by the Corvid-19 crisis and the protection measures such as medical masks - mandatory for access to some commercial spaces, rubbing alcohol, the construction of the temporary hospital in collaboration between retailer Auchan and Leroy Merlin. The most necessary purchases for the Easter holidays were not neglected, brochures and online catalogues for products promotion also played an important role, bringing attention of those interested by the special shopping program adopted for the state of emergency, Easter and the 1st May. Based on their frequency of occurrence, the fig. no. 5 includes in the world cloud format the most common topics.

To capture the most frequently used combination of words, two bigram charts were designed, as depicted in fig. no. 6, one for each timespan used in our analysis. Based on these charts the interest of customers is more clearly identified, so that before crisis the messages envisaged *promotion brochure, catalog promotion, children's collections Star Wars, Kaufland Animatera, Fantasy World*, but also other promotion strategies such as gastronomic live cooking presentations of the chef *Sergiu Nedelea*, or of the *Sitcom Acting - Gourmet*

Improvisational, or personalized offers based on *Discount card*, *Mega Image-Telekom Romania partnership*. During pandemic crisis, the top of identified topics revealed (fig. no 6b) some new combination of words and such some products and services of interest during this period, like: *toilet paper*, *hygiene product*, *delivery home*, *FoodPanda partner*, *quick delivery*, *medical equipment*, *food hygiene*, *health professional*, and also related to humanitarian actions and foundations, like: *Carrefour foundation*, *foundation donated*, *red cross*. The interest remains also towards *promotion brochure*, due to the overlap with the holiday's Easter, but also because the retailers have proposed promotional packages for fighting COVID.

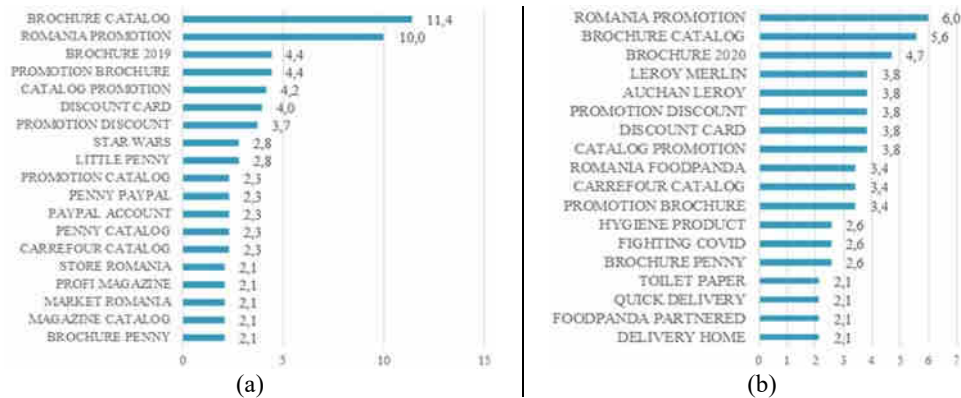


Fig. no. 6 Bigram for (a) pre-pandemic, and (b) during pandemic period

Source: authors' own design based on research results

From the geospatial perspective, the vast majority of tweets posted during the pre-pandemic period, were identified in the cities where the traders have physical stores. Fig. no. 7 includes geospatial distribution of tweets during the analysed periods.

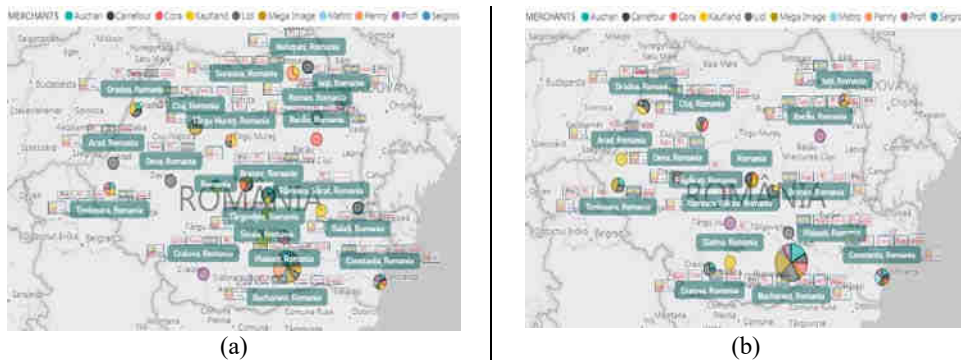


Fig. no. 7 Geospatial representation of tweets (a) before and (b) during pandemic period

Source: authors' own design based on research results

While, during pandemic period, the customers' interest on the more convenience stores, like *Mega Image*, *Profi*, *Lidl* significantly increased because the long-distance travel was banned and the time slot for reaching the physical markets has become limited. Discussions about large hypermarkets do not disappear at all, but they were more focused on corporate social responsibility - donations to the health system, hospital construction. By contrast, in the pre-pandemic period, the posted tweets discussed about the big players from the market. Following the cluster analysis for all retailers, the messages submitted during pre-pandemic

period were clustered into five statically significant groups as they generated the highest level of homogeneity within classes, namely 0.81 from 1. Messages clusterization generates topics of interest. The first cluster includes messages about *Mega-Image - Telekom Romania partnership*, the second cluster groups messages about *customer presence in stores*, the third cluster refers to *collection, promotion and loyalty card*, the fourth group includes messages mentioning *brochures, catalogues and offers* and the largest cluster groups *messages of commercial interest*. Fig. no. 8 includes clusterization results for both periods.

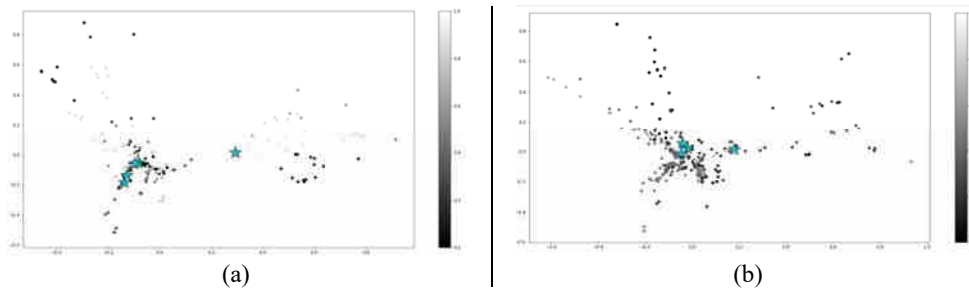


Fig. no. 8 Cluster analysis (a) before pandemic, and (b) during pandemic crisis

Source: authors' own design based on research results

Even the number of tweets significantly increased during pandemics, they were more homogeneous, from the content perspective. So that, cluster analysis has generated only 4 clusters, at the highest homogeneity level of 0.77 from 1. The content of tweets reflected to a large extent the specificity of this period, as one cluster of messages depict *merchant donations for humanitarian purposes during the pandemic crisis*, the second cluster includes *messages of commercial interest- in connection with pandemic crisis*, the third group includes messages about *brochures, catalogues and offers*, and the smallest one includes messages about *customer presence in stores*

Sentiment analysis revealed a slightly increase, with 3%, of positive perception of all retailers, compared with the previous studied time interval, with a decrease in the same extent of negative perception, as reflected in fig. no.9.

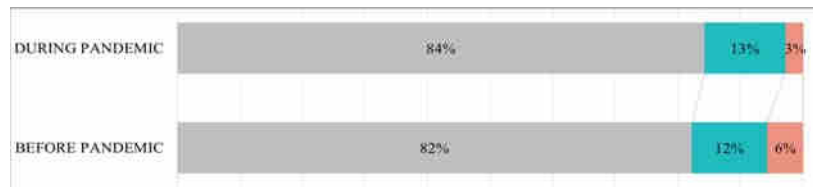


Fig. no. 9 Sentiment Analysis

Source: authors' own design based on research results

Going through the content of the positively classified messages, we noticed that the messages posted both by customers and by merchants urge to responsibility and restraint. Some messages classified as negative, noticed the requirement to wear mask and gloves bought at the entrance of the store at quite high prices, if the customers do not come with them from home. The content of messages classified as neutral announces various promotions, store schedules, online brochures. Examples of messages automatically classified as positive are: "*Carrefour also runs smoothly in Romania. The best prepared hypermarket chains*", "*Mega Image announces salary increases for employees and special bonuses*", "*I want to inform you that I was in the Metro and they took my temperature at the entrance. I'm OK.*"

Conclusions

It is very important for retailer to identify changes in consumers' expectation and habits especially during crisis to be able to anticipate how the landscape will look after the pandemics as these can become the new normal. The results of this research provide evidences that Twitter is a meaningful sensor in detecting patterns in consumers' interests. The framework proposed in this research paper allows to automatize the mining of Twitter messages based on some key terms, the names of retailers, to detect hot topics almost in real time and to mine the text to establish the popularity/opinion/sentiment in different locations from Romania. Even if the amount of acquired tweets was low, because the twitter data was collected following a well-defined procedure this is good enough to demonstrate the utility of proposed framework.

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CHOCOLATE, A GLOBAL BUSINESS

Sorin-George Toma¹ and Andreea Simona Săseanu²

¹⁾ University of Bucharest, Romania

²⁾ The Bucharest University of Economic Studies, Romania

E-mail: tomagsorin62@yahoo.com; E-mail: saseanu@yahoo.com

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Abstract

As an old food product, chocolate is consumed all over the world by people of different gender and ages. Chocolate has captured many consumer's attention and led to the emergence of an industry that provides a food product with a unique flavour and taste. As a result, the economic and business impact of chocolate has significantly increased in time. The paper aims to illustrate the main characteristics of chocolate and to present the key players acting in the global cocoa and chocolate markets, namely the largest cocoa producing countries and the largest chocolate companies. In order to attain the objectives of the paper, the authors used a quantitative research method. The information was gathered through desk research. Numerous secondary data from a significant literature review were collected, analysed and synthesized. The paper shows the expansion of chocolate business throughout the world and, therefore, its global dimension. Also, it demonstrates the need to analyse the global chocolate market in connection with the global cocoa market and illustrates the domination of multinational and transnational corporations in the chocolate businesses.

Keywords

chocolate, chocolate market, global business, cocoa

JEL Classification

F00, F23, M16

Introduction

As an old food product, chocolate is consumed all over the world by people of different gender and ages. Cocoa and chocolate products have constituted delicacies for human beings for hundreds of years (Keen, 2001). Chocolate is intrinsic to our lives from early years to elderly years through its effects on our mood, nutrition and health (Szogyi, 1997). Moreover, the economic and business impact of chocolate has significantly increased in time.

Chocolate has captured many consumer's attention and led to the emergence of an industry that provides a food product with a unique flavour and taste. As a response, business organizations of all sizes and types, either small and medium enterprises or big corporations,

has entered the chocolate industry. In order to meet consumer's desire for new experiences chocolate makers and manufacturers are continuously innovating both in the production and marketing processes. On the other hand, new consumer standards have been imposed with major implications for the chocolate value chains and industry in recent years (Squicciarini and Swinnen, 2016). Thus, chocolate has become a global business.

The candy companies have hundreds and thousands of employees worldwide and obtain \$billion in revenues. Some of them, such as Mars Wrigley Confectionery (USA) or Nestlé (Switzerland), have become multinational and transnational corporations. Others have remained small to medium size or craft chocolate makers.

During its long history, the developments in the manufacture, distribution, trade and consumption of chocolate have highly contributed to the creation of a global chocolate market. As a multibillion dollars market, today's global chocolate market comprises a multitude of actors such as the cocoa producing countries, cocoa trading companies, chocolate makers and manufacturers and retailers. This is why a lot of literature related to the chocolate businesses, manufacturing and marketing, market size and trends, and industry analysis has been published in recent years (Bloss, 2010; International Cocoa Organization, 2020; Technavio, 2020).

The paper aims to illustrate the main characteristics of chocolate and to present the key players acting in the global cocoa and chocolate markets, namely the largest cocoa producing countries and the largest chocolate companies. The structure of the paper is as follows. The literature review is exposed in the second part of the paper. The third part of the paper deals with the research methodology. The fourth part of the paper shows the results of the research. The paper ends with conclusions.

Literature review

A plethora of definition related to chocolate has been identified in the literature. Chocolate is defined from different perspectives as follows:

- "Chocolate designates the product obtained from cocoa products and sugars which, ..., contains not less than 35 % total dry cocoa solids, including not less than 18 % cocoa butter and not less than 14 % of dry non-fat cocoa solids" (European Parliament, 2000, p. 8).
- "Chocolate is a natural food and is a mixture of many chemical compounds" (Tannenbaum, 2004, p. 1132).
- "Chocolate is a food made from the beans of the cacao tree" (Morganelli, 2006, p. 4).
- "Chocolate is a dense suspension of solid particles, with an average solids concentration of about 60 to 70 % from sugar, cocoa and milk (depending on the type) dispersed in a continuous fat phase, which consists mostly of cocoa butter" (Afoakwa, 2008, p. 109).
- "Chocolate is dense suspension of solid particles comprising 60-70% sugar and non-fat cocoa solids" (Aidoo et al., 2013, p. 84).
- "Chocolate is a snack produced in a liquid form, paste, or block or also used as an ingredient" (Technavio, 2018, p. 20).

Despite the fact that there is not a single comprehensive definition of chocolate some of its important features can be emphasized. First, chocolate is a natural product. The key ingredient of chocolate is cocoa, responsible for its flavour. The cocoa or cacao tree (*Theobroma cacao*), a native of the tropical forests, originated in Central and South America (Minifie, 1989; Moss and Badenoch, 2009). The four types of cocoa are: Criollo, Forastero (Amelonado), Trinitario, Nacional (Beckett, 2019). The cocoa supply chain is rather long as it extends "from smallholders, often in remote, less well-developed tropical regions of the world, to factories and consumers mainly in developed industrial countries" (Beckett, 2009, p. 10). Nowadays, the cocoa-chocolate value chain is characterized by "a fragmented supply structure, strong concentration in the intermediate industry, and a mixed set of final producers" (Poelmans and

Swinnen, 2019, p. 23). Second, chocolate comprises chemical compounds such as sugar and sugar substitutes, sweeteners, and milk powder. According to standards, chocolate may also include acidity regulators (e.g., citric acid, magnesium carbonate), emulsifiers (e.g., lecithins), flavour agents (e.g., vanillin), glazing agents (e.g., gum arabic) etc. (Food and Agriculture Organization of the United Nations, 2003). Third, the chocolate making process encompasses the following main phases:

- cocoa bean preparation (fermentation, drying, transport);
- cocoa liquor manufacture (clean, roast, remove shell, grind);
- press, mix, grind, agitate, enrobing, moulding, panning (Beckett, 2019).

Fourth, chocolate is produced in various forms and varieties such as black chocolate, chocolate as a drink, chocolate bars. Fifth, chocolate is not only a food but also a medicine (Keen, 2001). On the one hand, chocolate represents a highly caloric food (Paoletti et al., 2012). On the other hand, the medical literature stresses the presence of polyphenolic antioxidants in chocolate (McShea et al., 2009; Petrone et al., 2013). Sixth, chocolate represents an increasing global business. Thus, the global chocolate market was valued at around US\$98.3 billion in 2016 (BizVibe, 2018) and at \$103.28 billion in 2017 (Zion Market Research, 2018). It is said that the global sales for chocolate are expected to reach \$139.94 billion by 2024 (PR Newswire, 2019) and to hit \$145.17 billion by 2026 (Candy & Snack Today, 2020). During the period 2020-2024 the chocolate market size will grow by \$41.15 billion (Technavio, 2020).

Research methodology

In order to attain the objectives of the paper, the authors used a quantitative research method. The information was gathered through desk research. Numerous secondary data were collected from a significant literature review. Then, these data were analysed and synthesized. The main sources were journals (e.g., Nutrition, Candy Industry), books from renowned publishing houses (e.g., Wiley, Oxford University Press), and reports of international organizations (e.g., International Cocoa Organization, Food and Agriculture Organization of the United Nations) from the fields of economics, business, chemistry and nutrition, and were found in electronic databases (e.g., Emerald Insight, Springer) and libraries (e.g., the Central University Library Carol I of Bucharest).

Results and discussion

After reviewing the literature, the authors analysed and synthesized the data in order to present the key players acting in the global cocoa and chocolate markets. In the period 2017-2018, the global cocoa market was dominated by Cote d'Ivoire, the largest cocoa producing country in the world (Table 1 and 2). In 2017, five countries were from Central and South America (Brazil, Ecuador, Peru, Dominican Republic, Colombia), four countries were from Africa (Cote d'Ivoire, Ghana, Nigeria, Cameroon) and one country from Southeast Asia (Indonesia).

Table no. 1 The 10 largest cocoa producing countries in the world, 2017

No.	Country	Production (tonnes)
1	Cote d'Ivoire	2,034,000
2	Ghana	883,652
3	Indonesia	659,776
4	Nigeria	328,263
5	Cameroon	295,028
6	Brazil	235,809
7	Ecuador	205,955
8	Peru	121,825

9	Dominican Republic	86,599
10	Colombia	56,808

Source: Phayanak, *Top 10 cocoa producing countries in the world 2017*.
<https://chocolatephayanak.com/unkategorisiert/where-is-cocoa-grown-around-the-world/>.

In 2018, five countries were from Central and South America (Brazil, Ecuador, Mexico, Peru, Dominican Republic), four countries were from Africa (Cote d'Ivoire, Ghana, Nigeria, Cameroon) and one country from Southeast Asia (Indonesia).

Table no. 2 The 10 largest cocoa producing countries in the world, 2018

No.	Country	Production (tonnes)
1	Cote d'Ivoire	1,448,992
2	Ghana	835,466
3	Indonesia	777,500
4	Nigeria	367,000
5	Cameroon	275,000
6	Brazil	256,186
7	Ecuador	128,446
8	Mexico	82,000
9	Peru	71,175
10	Dominican Republic	68,021

Source: Matyasovszky, M., 2018. *Top 10 Cocoa Producing Countries*. WorldAtlas, 28.09.2018.
worldatlas.com/articles/top-10-cocoa-producing-countries.htm.

In the period 2017-2019, the global chocolate market was dominated by Mars Wrigley Confectionery (USA), the largest chocolate company in the world (Table 3, 4 and 5). Interesting enough is the fact that the top of the four largest chocolate companies in the world remained the same in that period. In 2017, four companies were from Europe (Ferrero Group, Nestlé, Lindt & Sprüngli, Haribo), three companies from North America (Mars Wrigley Confectionery, Mondelēz International, Hershey), two from Asia (Meiji, Ezaki Glico), and one from South America (Arcor).

Table no. 3 The 10 largest chocolate companies in the world, 2017

No.	Company	Net sales (US\$ billion)
1	Mars Wrigley Confectionery (USA)	18.000
2	Ferrero Group (Luxembourg/Italy)	12.000
3	Mondelēz International (USA)	11.560
4	Meiji (Japan)	9.652
5	Nestlé (Switzerland)	8.818
6	Hershey (USA)	7.533
7	Lindt & Sprüngli (Switzerland)	4.106
8	Ezaki Glico (Japan)	3.242
9	Haribo (Germany)	3.180
10	Arcor (Argentina)	3.100

Source: Pacyniak, B., 2018. *The top 100 candy companies in the world in 2018*. Candy Industry, 23.01.2018. <https://www.candyindustry.com/articles/88019-the-top-100-candy-companies-in-the-world-in-2018>.

In 2018, five companies were from Europe (Ferrero Group, Nestlé, Lindt & Sprüngli, Haribo, Perfetti Van Melle), three companies from North America (Mars Wrigley Confectionery, Mondelēz International, Hershey), and two from Asia (Meiji, Ezaki Glico).

Table no. 4 The 10 largest chocolate companies in the world, 2018

No.	Company	Net sales (US\$ billion)
1	Mars Wrigley Confectionery (USA)	18.000
2	Ferrero Group (Luxembourg/Italy)	12.390
3	Mondelēz International (USA)	11.792
4	Meiji (Japan)	9.662
5	Hershey (USA)	7.779
6	Nestlé (Switzerland)	6.135
7	Lindt & Sprüngli (Switzerland)	4.374
8	Ezaki Glico (Japan)	3.327
9	Haribo (Germany)	3.300
10	Perfetti Van Melle (Italy)	3.086

Sources: Beautiful Data, 2020. *Global top 10 candy companies in the world (2012-2020)*. YouTube, 15.01.2020. https://www.youtube.com/watch?v=R5LD_t-pajU; Scully, C. Z., 2019. *The 2019 top 100 candy companies*. Candy Industry, 16.01.2019. <https://www.candyindustry.com/articles/88488-the-2019-top-100-candy-companies>.

In 2019, five companies were from Europe (Ferrero Group, Nestlé, Lindt & Sprüngli, Haribo, Pladis), three companies from North America (Mars Wrigley Confectionery, Mondelēz International, Hershey), and two from Asia (Meiji, Ezaki Glico).

Table no. 5 The 10 largest chocolate companies in the world, 2019

No.	Company	Net sales (US\$ billion)
1	Mars Wrigley Confectionery (USA)	18.000
2	Ferrero Group (Luxembourg/Italy)	13.000
3	Mondelēz International (USA)	11.800
4	Meiji (Japan)	9.721
5	Hershey (USA)	7.986
6	Nestlé (Switzerland)	7.925
7	Lindt & Sprüngli (Switzerland)	4.574
8	Pladis (United Kingdom)	4.515
9	Haribo (Germany)	3.300
10	Ezaki Glico (Japan)	3.156

Source: Scully, C. Z., 2020. *2020 top 100: exclusive list of the top 100 candy companies in the world*. Candy Industry, 31.01.2020. <https://www.candyindustry.com/articles/88964-top-100-exclusive-list-of-the-top-100-candy-companies-in-the-world>.

The results mentioned above show the dynamism of the two markets. In essence, several issues can be highlighted as follows:

- the booming global chocolate market has determined the rise of the global cocoa market as these two markets are connected;
- the global cocoa market is dominated by traditional producers from Africa, Asia, and Central and South America;

- chocolate is mostly manufactured, sold and consumed in different parts of the world than in the places where cocoa is produced;
- the global chocolate market is highly competitive because of the presence of big multinational and transnational corporations;
- the global chocolate market has been dominated by European and American companies.

Conclusions

The discovery and exploitation of cocoa led to the emergence and development of chocolate industry. During the time, the chocolate manufacturing and marketing have transformed into a global multibillion dollars business.

The importance of the research is given by its theoretical contributions. First, the paper provides a better understanding of an old food product called chocolate. Second, it shows the expansion of chocolate business throughout the world and, therefore, its global dimension. Third, the paper demonstrates the need to analyse the global chocolate market in connection with the global cocoa market. Fourth, it illustrates the domination of multinational and transnational corporations in the chocolate businesses.

Further researches might expand the analysis by taking into account other stakeholders involved in the chocolate business at a global level.

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MONEY LAUNDERING MEASUREMENT. MICROECONOMIC AND MACROECONOMIC APPROACHES

Iulia Oana Florea¹

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: oana.stefanescu@stud.ase.ro

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Abstract

The purpose of this paper is to emphasize the volume of money laundering, using measurements and concepts issued by policymakers, and to highlight the macroeconomic effects on a state's economy. The secret existence of these fraudulent acts makes it difficult to get an overall estimation of its scale and rate of growth. The condition was widely debated in economic literature, which revealed a variety of illicit economic developments calculating methods. Unfortunately, several ways used to calculate the black economy, appear to underestimate or overestimate the magnitude and dynamics of the money laundering. Furthermore, calculating the size and amount of monetary assets produced by organized crime is an exceptionally challenging job, due mainly to the lack of adequate knowledge. There have been developed a variety of estimation methods by the researchers that will be analyzed in the following article.

The methodology used for this paper is made of scholarly articles and articles relevant to the current topic, retrieved from the web as sources of information. Different approaches will be considered to determine the dynamics of money laundering.

Findings and contribution to the field of study: money laundering alters a state's economy by creating a fertile territory for the shadow economy to exist and grow, for the criminal groups to prevail and thus for illicit activities to thrive. To reduce these adverse consequences, it is fundamental to measure the volume of money laundering phenomenon and to determine the most sensitive features related to money laundering in a state.

Keywords:

Money laundering, illegal transactions, organized crime, fraud, microeconomics, macroeconomics

JEL Classification

K42

Introduction

Money laundering is a term of relatively recent origin. Money laundering is a complex activity that no one in civilization would take seriously at first sight. It's an entirely new offense compared to street crimes. Critics often refer to it as a victimless crime, but it is not a crime against a single person but a crime against countries, governments, and the whole world. Money laundering has become a significant threat.

Historically, there are multiple interpretations for money laundering based on how you look at the issue, from a legal, economic, or social point of view. For this article, I will choose the interpretation used by the Australian Criminology Institute, which notes that: "[...] money laundering is the process by which the proceeds of crime are put through a series of transactions, which disguise their illicit origins, and make them appear to have come from a legitimate source" (Graycar and Grabosky, 1996, page 8).

Another definition that I find complex enough to express the nature of this phenomenon is the one issued by Robinson: "Money laundering is called what it is because that perfectly describes what takes place – illegal, or dirty, money is put through a cycle of transactions, or washed, so that it comes out the other end as legal, or clean, money. In other words, the source of illegally obtained funds is obscured through a succession of transfers and deals so that those same funds can eventually be made to appear as legitimate income" (Papanicolaou, 2015, page 1).

Money laundering is a mechanism in which vast sums of money acquired unlawfully (through cocaine dealing, criminal activities, or other severe crimes) seem to have come from a lawful source. But in plain words, it's the turn of black capital into white wealth. It is going to be necessary to clean up big piles of money. If this is achieved effectively, it will enable the offenders to keep ownership of their earnings and thereby have legal protection for their source of income.

If an illegal act produces considerable income, the entity or organization responsible must find a way to manage the proceeds without attracting publicity to the actual crime or the individual involved. The camouflage of the origins of the funds, by altering the shape or by shifting the funds to a position where they are less likely to draw suspicion, is what the criminal groups are trying to achieve.

Money laundering plays a crucial role in promoting the plans of the drug dealers, terrorists, organized crime groups, the tax evaders and people who ought to stop the suspicion from the government that unexpected money arises from illicit activities. Such criminal organizations attempt to gain capital and influence by illegal activity and aim to penetrate the legal community, thus distorting the conditions of the fraud. They produce millions upon millions of dollars for the leaders of the company and encourage their employees to enjoy luxurious lives that have been created by the poverty and deprivation of their illegal behavior.

Money laundering is a worldwide burden and, at the same time, a critical link in the monitoring of criminal activities, especially from organized crime. Criminals attempt to cover their illegal profits by laundering money through monetary networks, foreign trade, or other efforts. The purpose of their actions is to conceal these funds obtained from criminal activities, and also to hide the origin of the funds, thus making it impossible to track them and also to make them appear as legitimate.

There has been made a noticeable improvement in the battle against money laundering and terrorism funding in the economic context, in particular through the implementation of stricter anti-money laundering and counter-terrorism funding laws (AML- Anti Money Laundering and CTF- Counter-Terrorism Funding) and strengthened rates of inter-agency coordination and assistance.

Several studies have centered on criminalizing money laundering to reduce the level of this type of crime. Yet, only limited literature analyzes the economic effect of money laundering in a territory, and it does not provide empirical evidence for the most part. Besides, most

studies focus on developed countries and therefore isn't enough evidence, based work that explores the magnitude of the money laundering phenomenon in developing countries. For this reason, this paper will pursue this inconsistency by elaborating on the economic influence of money laundering and finding alternative metrics to determine the status of money laundering, especially for developing countries. The findings can be used to determine the hazards and susceptibility in a region.

Literature review of the existing approaches for ways of quantifying the money laundering

Over the years, a variety of efforts have been made to assess the extent and nature of the issue of money laundering and take a closer look at how the funds are being laundered (Unger et al., 2006; Unger, 2007) and terrorist acts are being funded (Walker, 1999; Roth et al., 2004; Schott, 2006; Zdanowicz, 2009; Schneider, 2010). However, the highly clandestine existence of money laundering and terrorism funding renders it very complicated to achieve such activities. Many of the attempts to qualify the magnitude of the issue have provided a variety of widely differing figures, none of which can be irrefutably proved (Reuter, 2013).

There have been made attempts to describe how the mechanism of money laundering works and how terrorist funding may be carried out, but they are vague and typically do not address in depth the players, financial transactions, and actions involved in carrying out such operations.

Additionally, numerous foreign organizations develop outstanding research works at strategies and procedures for money laundering by publishing annual statements and reports. These statements, which provide specifics of sanitized, effectively-identified incidents of money laundering and terrorist funding, include a wealth of knowledge on emerging risks and developments, methods utilized, and, in certain instances, the sum of funds involved.

Researchers have identified four critical methods to quantify money laundering (Quirk, 1996):

- Methods that analyze money laundering in terms of constraints and case studies raised by financial institutions:
- Practices that concern the underground economy; they use monetary aggregates to quantify the amount of money laundering in the underground economy.
- The third type of analysis reflects on the illegal environment, demonstrating the unlawful implications of financial well-being, social consequences and economic effects, including acts that fall under criminal law
- A fourth method analyzes the irregular money transfers involved in cross-border transactions.

Measuring the sum of money lost through money laundering income is highly tricky, so it is important to highlight several points of view depending on the methods utilized by offenders. The best option for money-launderers to cover their profits from criminality is to move the funds out of the territory, resulting in cash transfers between countries connected with funds-laundering being misunderstood as capital flight.

Measuring the money laundering phenomenon

In 1989, the Financial Action Task Force (FATF) "Working Group on Statistics" report on "Narcotics Money Laundering – Assessment on the Scale of the Problem" acknowledged the absence of accurate metrics to quantify money laundering. In 199, the European Union adopted the Convention on the Laundering, Search, Seizure, and Confiscation of the Proceeds from Crime, and the FATF's "40 Recommendations" has been written on the prevention of money laundering.

The International Monetary Fund (IMF) study estimate of between 2-5 percent of global Gross Domestic Product (GDP) is the most frequently quoted statistic for the magnitude of money laundering (Camdessus, 1998). A decade on, this statistic is still used by other

scholars. In fact, in a new survey, the Australian Transactions Reports and Analysis Centre (AUSTRAC) measured the expense of violent and organized crime in Australia at about 10-15 billion USD a year or between 1.2-1.8 percent of the Australian GDP, representing the possible volume of capital that needs to be "cleaned" by money launderers (AUSTRAC 2011). In comparison, using an empiric approach to calculate the overall volume of money trafficking globally, Walker (1999) reports that approximately 2.8 trillion USD per year is concentrated in Europe and North America. That is around 6.5 percent of GDP worldwide, and it is higher than the original range of IMF figures.

A later analysis by Masciandaro and Barone in 2008, using a multiplier model of the relationship between illegal business profits and money laundering practices, estimated that the volume of money laundering would be 2.7 percent of GDP worldwide, meaning 1.2 trillion USD.

Another significant effort to measure money laundering was made by Walker in 1995, by defining the "*Walker Gravity Model*". According to this estimate, the amount of global money laundering was 2.85 trillion USD in 1995 (Walker, 1995). Many countries tend to reduce the anti-money laundering laws to draw more financial capital to their economies. This is the best opportunity for business transactions of filthy capital. According to Walker's Gravity Model, money moves globally, and the legalization of income from the black market is now a cross-border issue (Walker et al., 2009). This method has become famous over the last few years. Current approaches, case reports, mathematical or econometric tools used to quantify the scale of the illegal economy continues to under evaluate or over evaluate the importance of money laundering. Other scholars (Levi and Gold, 1994) attempted to examine financial data, especially "suspicious transactions" data, to determine the level of money laundering, the Walker methodology was somewhat specific. Because money laundering includes several phases – "placement" (placing illegal money), "layering" (distributing cash across the globe to conceal its illegitimate origin) and "integration" (investing the cleaned money) – the same money will go through several separate channels in the laundering system, so tracking financial transactions details were likely to mean double -or perhaps more – following. Worse, tracking suspicious transactions was likely to entail significant mistakes in both directions ("suspicious" operations that were technically legal, and "legitimate" deals that were criminal).

Walker's gravitational concept is an entirely different solution. It allows quantifying the illegal financial transactions across various jurisdictions around the world. Walker's model seems to be the most compelling as it has a quantitative approach. This acknowledges that a practical quantification of money laundering will incorporate criminology, economics, and financial components.

Walker's theory is based on Newton's universal law of gravitation, established in 1687. Due to the theorem of the law of gravity, the power of attraction between two bodies depends on their mass, the physical distance between them, and the force of gravity (Head, 2003).

$$F_{12} = \frac{g * M1 * M2}{d_{12}^2} \quad (1)$$

Where:

F_{12} = the attraction force between objects 1 and 2

$M1, M2$ = the objects mass

d_{12} = the distance from object 1 to object 2

g = the gravitational constant

Other researchers classify the strategies for calculating money laundering and funding extremism within micro-economic and macro-economic approaches.

Micro-economic methods include:

- Multi-source/multi-method calculations focused on institutional crime statistics and probability sample victimization surveys
- Possibilities and non-possibilities professional opinion interpretation surveys
- Analysis of suspicious activity reports (SARs) to show volumes of money trafficking
- Review of reports of criminals or law enforcement case records.
- Micro-economic estimates

Macro-economic methods include:

- Models based each country estimates.
- Models based on import/export pricing anomalies
- Calculations focused on "sensitive" variables, such as demand for the currency.

The multi-source/multi-method calculations used by (Unger et al., 2006; Walker, 1997; Walker, 1999; Stamp and Walker, 2007), utilized crime statistics and victimization survey statistics to assess the profits of crime based on the form of crime. Unger et al. (2006) used the "attractiveness model" and the "distance deterrent model" developed by Walker (1997) to measure the proportion and volume of criminal gains that have been laundered or diverted to another country. Such two equations were then used together to measure the proportion of money moving from one country to another (Unger et al., 2006).

Money laundering may also be assessed by surveys. Experts and law enforcement officials can be consulted. However, polls often suffer from several prejudices. The survey may not be universal, and the individuals consulted or surveyed may have had their interpretation differences. For starters, there could be an overestimation of money laundering by the authorities responsible for the fight against money laundering, as it is their everyday activity and their priority. Around the same time, the same individuals can still be misunderstood because they believe they are doing their mission of combating crime successfully and performing their job well. But, although understanding biases, comprehension biases, non-response biases, and questionnaire biases could affect these data, at the same time, they can provide valuable perspectives, especially when working with otherwise unobservable data.

SARs research, also known as irregular activity data, is used by Stamp and Walker (2007) to evaluate patterns in the reporting market, activity values, and the complexity of the conduct as measured by Financial Intelligence Unit (FIU) researchers.

A variety of scholars assessed the participation of terrorist groups (Kane and Wall, 2005) and the funding of terrorism (Roth et al., 2004) using case-related law enforcement details. Kane and Wall (2005) utilized detail obtained from imprisoned offenders, law enforcement records to research the modus operandi of alleged attackers and leaders of terrorist groups. Roth et al. (2004) utilized a variety of outlets to include a high-level overview of al-Qaeda-related funding of terrorism, including raw and completed information as well as law enforcement and other evidence points.

Police reports and their analysis suffer not just from the underestimation of the scale of the problem, but also from the reality that they are worthless for calculating regional or global money laundering since they have an underlying conceptual difficulty when aggregated. The tougher the battle against launderers, the more likely the police become stricter in reporting the cases of money laundering. When police archives are used to make general claims on corruption, the statistics will suggest that money smuggling is rising despite a tougher anti-money laundering strategy. Logically, one should expect money laundering to decrease with a more successful strategy and not to rise.

Money laundering may also be measured by using proxy variables. Tanzi (1997), from the IMF, used the discrepancy between money supply and capital circulation in the US economy to predict money laundering. He reported that 5 billion USD a year had been smuggled out of the US in cash by the illicit drug trade in 1984 and was now absent from the money supply. Even then, he cautioned that this would generate a possible risk for the global financial system owing to the fact that such dollars might be dumped in return for the foreign currencies.

Nevertheless, the study excludes forms of offenses other than narcotics, limits itself to money that enters a nation in currency, and does not take into consideration the usage of the normal financial mechanism or the flow of exchange.

Another method to quantify money laundering is to use methods from calculating the black market economy, such as the Dynamic Multi-Case Indicators (DYMIMIC) model. It uses two collections of measurable variables and connects them to an unobservable variable as a proxy. One collection of factors that can be identified is the triggers (for the black economy) such as legislation, taxation, and enforcement. The other package is considered a predictor. Such measurable factors are similar to money laundering, which involve rising competition for capital, reduced official development, and a rise in crime levels. The DYMIMIC model utilizes component analysis to evaluate how well the various trigger factors describe the unobservable variable and the factors that can be clustered together. The same is achieved with the variable factors. This implies that statistics determine which measure shapes the main cluster of triggers of the secret economy and which are important for parallel measures of the shadow economy. Indicators are categorized into subgroups and are meant to reflect portions of the unobservable element. However, data cannot override theory. The approach distinguishes variable that is strongly correlated and calculates the same component of the proxy variable and eliminates redundancies in the collection of proxy variables.

To date, Walker Model seems to be the most favorable of all the above methods, in particular, since it can be used by all territories and jurisdictions, and because it can be offered a theoretical basis that is far better and more realistic than all the other global money laundering calculation methods reported so far. Measuring money laundering involves a mixture of criminology, economics, and banking, all of which are part of the Walker Model.

Conclusions

Money laundering has had a significant adverse effect on the economies of both industrialized and developing countries. To reduce adverse impacts, it is essential to quantify the volume of money laundering in a nation compared to its total economic operations.

This paper introduced the concept of a model for estimating money laundering movements around the world. Although there are several issues with incomplete and non-comparable evidence, there do tend to be logical approaches for utilizing expert information to fill such holes. The approaches rely on gathering or predicting details that can be cross-checked, meaning that while it may undoubtedly be in error in some instances due to insufficient data or erroneous conclusions, there are many possibilities for cross-checking with other model results. For example, forecasts based on statistics and observations about the degree of crime and income can not logically clash with projections based on economic or financial results. A variety of ratios and indexes are often determined for each nation in the model that can be measured by professional opinion. Whenever they are in disagreement with the pattern, that is an indication that a third viewpoint is required, and further work has to be conducted specifically in the field of data controversy.

Many of the figures estimated for the world money laundering fall within the framework of the IMF's estimation as 2-5 percent of global GDP (Camdessus, 1998). For, eg. Baker (2005) estimates 2.4-3.6 percent, Schneider and Windischbauer (2008) calculate it as 3.4 percent, and Masciandaro and Barone (2008) estimate it at 2.7 percent. Walker (1999) measured money trafficking at 9.5 percent, which is higher than that of the IMF. As a consequence, Walker's estimation was criticized for being too high, not considering laundering fees, and the data sources were too ambiguous, particularly for fraud and drug trafficking (Reuter, 2013). However, these reviewers have not given accurate forecasts, nor recommended any concrete changes to fix the perceived shortcomings in the Walker Model.

There is no absolute solution or universal model that outlines the exact situation in every region. Each model has its imperfections and flaws. Therefore, the figures can be presented

from several specific viewpoints. Notwithstanding the limitations and lack of precision of such statistics, the literature review offers clear proof of the importance of the extent of money laundering at both national and international levels, and the findings also indicate substantial quantities that cannot be overlooked in the growth of a region.

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FROM GROWTH, TO CHAOS, TO UNCERTAINTY: THE IMPACT OF THE COVID-19 PANDEMIC ON EUROPEAN TOURISM

Jacqueline-Nathalie Harba¹, Mihaela Parteca² and Stelian Bujduveanu³

^{1) 2) 3)} *The Bucharest University of Economic Studies, Romania*

E-mail: jacqueline_harba@yahoo.com; E-mail: parteca_mihaela@yahoo.com;

E-mail: stelianbujduveanu@gmail.com

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Abstract

The tourism industry has witnessed an unprecedented growth in recent years. According to the World Travel and Tourism Council, at a global level, the tourism sector accounted for 10.4% of global GDP and 10% of total employment, being one of the strongest drivers for economic growth since the global crisis in 2008. However, an unforeseen global event shook the entire world from its roots: the occurrence and rapid spread of the COVID-19 virus has created a huge shock for the global economy, having a drastic impact on individuals' everyday lives, as well as their mental health. Economic insecurity, social distancing, unemployment, illness and anxiety seem to be the words to define 2020 so far. The purpose of this scientific paper is to review different aspects of the negative impact of the COVID-19 outbreak on the tourism sector in Romania and discuss a set of recommendations for the restart of tourism post-crisis. The paper adopts a qualitative research design, drawing on in-depth interviews with officials from the Romanian central tourism authority to assess the current situation of Romania in the larger European context.

Keywords

COVID-19; pandemic; European tourism; Romanian tourism; crisis; economic depression

JEL Classification

Z30, Z31, Z32, Z33, Z38, L83, L88, M10, O52, P43

Introduction

The coronavirus has dramatically disrupted all aspects of human life at a global level, completely redefining the concept of "normality" and leading economies on the verge of collapse within a matter of weeks (Mair, 2020). Since it first occurred in Hubei, China late December 2019, COVID-19 has rapidly spread worldwide, causing a global pandemic that

has killed approximately 250.977 people, as reported by The European Centre for Disease Prevention and Control on the 5th May 2020. (Our World in Data , 2020)

The virus has not only raised unprecedented challenges for healthcare systems, but has also had a dramatic socio-economic impact worldwide, forcing states to take extreme measures, including lockdown of citizens, prohibition of public gatherings, closing schools, interruption of businesses and introduction of border/ travel restrictions. (European Tour Operators Association, 2020, p. 2)

Even though vital to slowing down the spread of the virus, the restrictive measures have had a high social and economic cost – “whole sectors are closed down, connectivity is significantly limited and international supply chains and people’s freedom of movement” have been severely affected. (European Tour Operators Association, 2020, pp. 2-3) Europe’s tourism has been widely affected by the coronavirus crisis, The European Commission estimating that hotels and restaurants across the European Union will lose half their income in 2020. (Henley, 2020)

This research paper is an analysis of the current state of EU tourism, prediction of financial repercussions of the Covid-19 crisis on the tourism industry and recovery forecast. The literature review will focus on the impact of the COVID-19 crisis on European tourism, with all its different branches, including flight operators, tour operators, hotels and F&B facilities. The primary research consists of a case study analysing Romanian tourism in the current European context, based on published data from official sources, as well two in-depth interviews with officials from the tourism central authority from Romania.

Tourism pre-COVID-19 outbreak

The tourism industry has been identified as one of the strongest drivers for economic growth, bringing a huge contribution to the recovery of the global economy after the 2008 financial crisis. (World Travel and Tourism Council, 2019) According to the World Travel and Tourism Council, at a global level the tourism sector accounted for 10.4% of the global GDP and 10% of the total employment, meaning a total of 319 million jobs in 2018 (World Travel and Tourism Council, 2019).

As Europe is a strong tourist destination, the European Union places tourism as an important tool for economic growth for its Member States (Lee and Brahmasrene, 2013). Globally, many countries focused on tourism development, as a mean or a strategy for economic prosperity and growth (Matarrita-Cascante, 2010). According to a European Travel Commission (ETC) press release on the 24th of April 2020, the Member States of the EU represent the most popular tourist destinations worldwide, in terms of receipts from international tourists (ETC, 2020). In 2019, a total of 427 billion euros were spent in tourism related activities in the EU, equivalent of 6,2% of EU’s total exports and 27 million jobs were related to the travel & tourism field, demonstrating the importance of tourism for the European economic growth (ETC, 2020).

The World Tourism Barometer, published by UNWTO in January 2020 states that “growth in tourist arrivals continues to outpace the economy”, increasing by 4% in 2019 - in real numbers meaning an increase of 1.5 billion overnight visitors (UNWTO, 2020b). As a highlight, France has registered the biggest increase in international tourism expenditure (UNWTO, 2020b). The UNWTO World Tourism Barometer also stated that for Europe, the most visited destination in the world, tourism in the region was largely fueled by intraregional demand (UNWTO, 2020b).

Tourism directly contributes 4.4% of GDP, 21.5% of service exports and 6.9% of employment in OECD (Organisation for Economic Co-operation and Development) countries, which makes it an important tool for economic growth. According to the OECD Tourism Trends and Policies publication, the continued growth of tourism provides real forecasts for sustainable development (OECD, 2020c).

Tourism post-COVID-19 outbreak

According to the International Monetary Fund, because of the COVID-19 crisis “the world economy is on track to record its worst years since the Great Depression of the 1930s.” (Tidey, 2020) Economists have expressed their concern that a prolonged lockdown could lead the global economy into collapse. (Mair, 2020)

With the world’s economy being on the verge to collapse, the UN World Tourism Organisation has raised warnings that the tourism industry is going to be “one of the hardest-hit by the outbreak of COVID-19.” (Tidey, 2020) Even though all European countries will suffer severe losses because of the outbreak, especially those that are very tourism-centric, the three most heavily-affected countries will be Italy, Spain and France. (Tidey, 2020)

The hospitality industry, as part of the tourism industry is being equally affected by different kinds of hazards, being deeply vulnerable to the negative impact of disasters (Ivkov et al., 2019). The hit of the COVID-19 outbreak deeply affected the economic operators in the hospitality industry, as this disease is easily transmitted between individuals; the vulnerability of the tourism sector comes from the fact that the human factor, both employees and clients, is part of the tourism product itself (Malhotra et al, 2009).

According to UNWTO, the outbreak of coronavirus placed all countries on lockdown, with 100% of global destinations adopting restrictions on travel and 72% of the world’s destinations completely closing their borders to foreign tourists (UNWTO, 2020a). Due to the temporary travel restrictions, there are very few new bookings for tourism services. At the same time, the industry is flooded with claims for refunds in the case of cancellations and claims for compensation in the case of non-performance of a service.

OECD estimates that the coronavirus impact on the sector will be up to 45% decline in international travel in 2020 and could get to 70% if the recovery process does not start in July and starts in September, highlighting that even if domestic tourism is also heavily impacted by the virus outbreak, this is subject to a considerably easier and quicker recovery (OECD, 2020b).

According to a recent Ministry of Economy, Energy and Business Environment press release regarding the videoconference of the ministers responsible for tourism in the EU Member States, organized by Croatia on the 27th of April 2020, the interventions of the high representatives at the virtual reunion focused on a few key points: the need to allocate budgetary funds dedicated to supporting the tourism industry in the context of the crisis caused by the outbreak of the new coronavirus; the need to facilitate transport connections to support mobility; the need to establish measures to protect both consumers and tourism operators; the need to elaborate a European strategy that will support the crisis exit and the resumption of tourism, in order to ensure a set of coordinated measures and hygiene standards valid at a EU level (Ministry of Economy, Energy and Business Environment, 2020a).

Research methodology

This paper adopts a qualitative research design. Results are presented as a case study, based on both published data from official sources and information collected through a total of two in-depth interviews with industry officials from the tourism and hospitality industry in Romania. Quotes from the interviews are used in the case study to introduce new details on a global issue that was ongoing at the time when this research was conducted.

Case study research

Researchers identify two main functions of case studies in scientific research: an explanatory function, where there already is a large body of published material on the subject and the case study is used to demonstrate that the referenced “theory has a practical application”; and an exploratory function, used to discover and explore new relevant “factors or issues.” (Myers,

2013, pp. 75-76) Given the fact that the COVID-19 pandemic is an ongoing issue and its impact on tourism is history in the making, the present paper makes use of case study research for exploratory purposes.

Structured interviews

Structured interviews have been used as a qualitative tool to collect new ideas on the present subject. In order to obtain valuable information on the same issue, but from different perspectives, the respondents have been chosen based on their current positions, as well as previous professional experience: they both have a vast experience in the tourism industry and occupy high-level positions in governmental institutions responsible for tourism and hospitality in Romania, but their area of expertise, as well as their roles are different. The first respondent is Emil-Răzvan Pîrjol, who has been the Secretary of State for Tourism within the Ministry of Economy, Energy and Business Environment since December 2019. The second respondent, George Bogdan Borună is the Director of the Control Directorate within the Ministry of Economy, Energy and Business Environment, the central authority responsible for tourism in Romania.

Case study: Romanian tourism in the current European context

Just like global tourism, Romanian tourism has also recorded considerable growth in recent years, predicted to develop even further before the coronavirus crisis stroke. According to OECD the overnights demonstrated an important growth in the last 10 years in Romania: international ones have gone from 1.6 million to 2.8 million, which represents 87% growth, while the domestic overnights increased from 10 million to 16.5 million (65% growth) between 2008 and 2018 (OECD, 2020a).

The contribution of tourism to GDP in Romania is of 2.8%, equivalent of 23.9 billion RON and the employment in tourism represents 4% of the total employment in Romania, the sector supporting directly 373.074 jobs in 2017 (OECD, 2020a).

It seems like not too long ago, industry specialists were constantly complaining about the work force crisis in Romania as the most pressuring issue affecting the tourism industry, claiming that nothing could possibly be worse than having a growing number of tourists, but not enough qualified staff to deliver the desired customer service to satisfy those tourists. And then the COVID-19 crisis happened, proving everyone wrong.

Starting on the 5th March 2020, at the level of the Tourism General Directorate from the Ministry of Economy, Energy and Business Environment a crisis cell has been established in order to, on the one hand, manage and propose solutions to support the economic operators in tourism, strongly affected by the spread of COVID-19, and on the other hand, help tourists. This crisis cell, made up of specialists from within the institution, constantly monitors and analyses the reported issues, making sure that they are solved in due time, in the best interest of those involved (Ministry of Economy, Energy and Business Environment, 2020b).

According to the first respondent, Mr. Emil-Răzvan Pîrjol, „the hospitality industry is an industry of peace, so therefore times of “war”, of personal insecurity do push tourism and leisure in an abrupt full lock-down”. In terms of numbers, he said that the revenue went down by 90% to 100% and that the Government offered aid for businesses, so up to the time of the study no bankruptcy was announced.

In an open letter that the Romanian Federation of Hotel Industry addressed to the Romanian Government on the 21st of March 2020, the associative entity stated that the current situation is one of the most difficult that the hospitality industry has ever faced, the negative impact generated by the coronavirus pandemic affecting it more seriously and much faster than any other disruptive event in the last 30 years. The impact that the coronavirus crisis has had on tourism, discussed in detail in the Literature Review, is also seriously affecting Romania:

according to the open letter, 62.5% of the hotels in country intend to close their doors indefinitely (FIHR, 2020).

When asked about the recovery time that tourism will need to return to the pre-crisis status quo, the secretary of state for tourism replied that it could take up to 24 months to re-establish the pre-pandemic level, if we refer to the recovery time after the 9/11 crisis and Lehman Brothers bankruptcy as an example.

Just like other EU countries, Romanian companies also face difficulties regarding liquidity availability as an effect of the numerous requests for refunds for the cancelled trips, because of the impossibility to travel under the current circumstances. Therefore, the Romanian central tourism authority publicly recommends that travellers consider accepting the delay of their trips at a later time. This could be done through so-called "travel certificates"/"credit notes" equal to the value of the reserved or paid packages, which can be used at a later date (Ministry of economy, energy and business environment, 2020c).

As previously discussed in the Literature Review, most of the countries have taken measures to mitigate the strongly negative impact of the COVID-19 outbreak on the tourism sector, by providing protection for employees and supporting liquidity for businesses (OECD, 2020b).

The economic measures taken by the Romanian Government are mainly in relation to the support of business environments, especially micro-enterprises and SMEs, by providing help for companies' liquidity, financial protection for employees, state loans and guarantees, as well as suspension of payments of loans, credit lines and installments, for up to 9 months (Emergency Ordinance no. 2020/29, 2020) (Emergency Ordinance no. 2020/37, 2020).

Given the difficulties that businesses in the tourism industry have been facing in terms of activity continuity during the COVID-19 crisis, some of these were unable to keep their employees. As a result, the Romanian Government has decided to pay the technical unemployment, with a maximum value of 75% of the average gross salary. These measures will benefit the category of employers that have been directly affected by restrictive measures, such as hotels, restaurants, cafes and entertainment institutions or other companies that can prove that their business has registered losses of at least 25% (Emergency Ordinance 2020/23, 2020).

Another measure that the Ministry of Economy, Energy and Business Environment has taken is that of granting holiday vouchers to both private and public sector staff to cover expenses incurred in resting on domestic tourism. Because given the current context individuals are unable to use these, the Government of Romania has decided to extend the validity of the vouchers until May 31, 2021 (Emergency Ordinance 2020/822, 2020).

In terms of recovery, when asked about what tourism will look like after the COVID-10 crisis ends, Emil-Răzvan Pîrjol replied that people will most certainly consume tourism as a product differently. As our social life will be subject to change, the near future will be more digital and local, tourists will travel mostly by car, so there is hope for recovery of domestic tourism or international travel, but on short distances. Regarding the timing of the restart of tourism, he said that „it will be for sure scheduled, in terms of countries, regions and type of businesses”. The second respondent, Mr. George Bogdan Borună, Director of the Control Directorate within the Ministry of Economy agreed: he claimed that tourism will most certainly not be the same. “No one should expect us to be able to have holidays the way we used to. New safety measures will be put in place, which will most certainly change the experiences we had up to this point. I believe that there will be an increase in individual tourism, avoiding travelling in groups. There will be changes, but the important thing is that tourism will not stop,” he said.

When asked about a timeframe for relaxation on confinement measures taken already by other countries, Mr. Pîrjol said that “nothing is too soon or too late if we consider health threats. It is important not to lose the efforts and sacrifices we all made in these past few months” and

that a re-opening in the wrong conditions and safety environment could throw everyone back to restrictive measures, which will mean very low chances to re-boost tourism in 2020.

Talking about measures that should be taken in order for accommodation units and F&B facilities to re-start their activity in Romania, Mr. Borună argued that a post-crisis strategy will have to be put in place for the entire economy, as it would be impossible to re-launch one sector only.

Conclusions

The question is, what is the future of European tourism? Realistically, no one can provide a definite answer at this point, since what we are witnessing is very much history still in the making. However, one thing is certain: even though individuals are desperate to return to their normal lives, one must accept that moving forward will not be easy and actions need to be taken with caution.

In Romania, after 60 days of declared State of Emergency (President Decree no. 195/16.03.2020 and no. 240/14.04.2020), on the 15th of May the country will enter an alert state, in which there will be a relaxation of some of the restraining measures. This means that certain activities will resume: trade will be partially opened; personal care salons, museums and probably parks will reopen for public access; the obligation to stay at home and to make a declaration when travelling inside the locality will be waived but however, in the first stage, travelling outside the locality, with some exceptions, will still be forbidden. (Presedintele Romaniei, 2020)

The World Tourism Organization has released a set of 23 recommendations in order to support the tourism stakeholders to surpass the COVID-19 pandemic. These are divided into 3 main pillars: crisis management and impact mitigation; stimulus provision and acceleration of recovery; preparedness for the future (UNWTO, 2020a).

A Communication of the European Commission, released on the 13th of May, stated that the tourism ecosystems should not be lost for the next several months and that Europeans could get some well-needed rest and time spent with family and friends when travelling inside their countries or abroad, if the relaxation measures are handled correctly, in a safe and coordinated manner across the EU (European Commission, 2020).

Although it is difficult to predict what will happen with Romanian tourism in the foreseeable future, based on the different papers and studies published so far, as well as the answers of the interviewed officials, it could be concluded that the re-launch of tourism in the post-COVID-19 crisis would need to follow a sequence of stages: i) a phased re-opening should be considered in order to avoid new outbreaks of the virus, ii) economic measures to mitigate the impact of COVID-19 on businesses should be maintained during the recovery phase, iii) regaining the confidence of tourists to travel again is essential and iv) focus on increasing domestic tourism flows in order to re-boost the sector.

With a clearer view on how interdependent our world is, the tourism industry will survive, but the specific activities may be very different and most probably the way people act and what they value after the crisis will drive new public policies and stimulate new services and tourism products (ETOA, 2020).

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A CASE STUDY OF BUSINESS MODEL INNOVATION: BUILDING VALUE THROUGH GAMIFICATION

**Rodica Pamfilie¹, Roxana Procopie², Smaranda Giușcă³
and Andra Vasilcovschi⁴**

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: rodica.pamfilie@com.ase.ro; E-mail: procopier@yahoo.com

E-mail: smaranda.giusca@com.ase.ro; E-mail: andra.vasilcovschi@gmail.com

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Abstract

Innovation is a complex activity that can be implemented at different levels, such as product, process, marketing or business innovation. Since the outcome is generally positive for all stakeholders, organizations globally research this field and one innovative strategy that gained popularity in recent years is gamification. Gamification refers to the use of gaming techniques in non-gaming contexts. From education to economy, health and wellness, or public defense, this tool has the potential to captivate users and guide behaviors towards achieving a goal. From a user perspective, it can bring intrinsic benefits such as psychological well-being, in addition to the rewards defined in the system, whereas at organizational level, activity is improved, businesses can enhance their income, retain clients and consolidate their position on the market. The purpose of this paper is to analyze a business operating in online retail that improved its recent results through implementing gamification as an innovative strategy and to propose a series of guidelines on how to implement gamification as an innovative business model.

Keywords

business model, innovation, IT, gamification

JEL Classification

O30, M10

Introduction

In the context of a growing e-commerce environment, companies are looking for innovative solutions to increase the loyalty of their clients, improve revenue and gain a higher market share. Even more so today, when, due to global health risks, companies need to adapt and the struggle to remain profitable is harder. Consumers today are familiar with innovative IT

products, both hardware and software; they are used to accessing the internet daily and most understand the gaming elements, such as a hierarchy system based on levels and rewards, as well as the social component, developed with the growing popularity of social networks, thus making gamification a popular tool for organizational innovation.

This method implies using strategies particular to the gaming industry in a context not related to gaming, in electronic commerce, in the analyzed case, with the purpose to interact or change the habits of users.

This paper aims to present an analysis of how the adoption of innovative techniques specific to gamification can impact business performance. The method of research chosen is a case study of a top retail site in e-commerce, specialized in selling clothing goods. Particular emphasis is placed on the implications of the gamifications techniques applied and conclusions are drawn regarding guidelines on building an innovative business model based on gamification.

1. Innovation through gamification

In this ever changing economic and social environment, innovation should be an essential part of the culture of an organization. The process of innovation can refer to different stages of novelty, such as new to the firm, new to the market, new to the world (Kim, Tae-Yong and Byung-Yoon, 2020) thus on an organizational level, innovation can contribute to the development of a new product, process, to marketing innovation or to a model of organizational innovation.

Innovation can take place internally within a company or from outer sources, such as researching market leaders in the field, following the newest IT and scholastic publishing, as well as monitoring input from customers. Analyzing results of the innovation process should be possible through observing the development of the organization: from launching new products, to entering new markets, opening new offices, or enhancing income and so on (Bowman, Nikou and De Reuver, 2019).

The increased access to the internet on a global level as well as the enhanced use of mobile technology by consumers worldwide has determined organizations to rethink their business models and move more and more towards digital tools. The cutting edge technology is almost a basic need for the modern consumer and guaranteeing consumer loyalty is a test for businesses everywhere in this online environment, where competition is more and more intense. A progressive concept in business model innovation is gamification: the utilization of game components in a non-game setting so as to motivate users and guide behavioural changes in members. Drawing its inspiration from online gaming mechanics, the gamification model has become increasingly popular in recent years, being used in fields such as training and education, health or economy (Procopie et al., 2015). This business model is requiring knowledge of psychology, casual gaming mechanics, online marketing and information technology, along with establishing a coherent plan of goals, motivations and rewards.

Gamification has been found to have a significant and positive influence on online consumer decisions, its main factor that is driving it being the existence of a reward system (either symbolic, in the form of products, or real, in the form of money), whilst other forms of symbolic recognition like badges and leaderboards are facilitating the immersion of the consumers in the brands' universe through its online communities (Tobon, 2020).

The rise in popularity of gamification is also linked to the increased access to social networks, Facebook as the most renowned, as well as mobile technology, developers creating applications for different existing application stores such as iTunes, Google Play. In these online environments, users can share their progress within the gamification system with their online social group, thus satisfying the need of group recognition and also promoting the system to the rest of the social network (Smajlovic, Umihanic and Turulja, 2019).

Gamification is considered to be built on three concepts: mechanics, dynamics and emotions (Robson et al., 2014); mechanics referring to how the game is built: the goal, the rules, the game sequences, dynamics is referring to how the results of human interaction during the use of game mechanics happen, and emotions relate to what players feel while playing (Robson et al., 2014).

Gamification proves to be a great improvement to traditional loyalty programs, as Hwang and Choi (2020) showed that gamified loyalty programs result in significantly greater consumer loyalty to loyalty programs. And, again, it was the rewards that were more experiential and effective when gamification was used that made those loyalty programs more efficient and appealing.

Some reports, such as the New York Stock Market Nasdaq report, estimate that innovation through gamification trend is upward and more and more organizations will apply it in the following years, as the market was estimated at 5.5 billion in 2018 and the compound annual growth rate is estimated to be around 30% per year until 2024, according to the same report. Given that one aspect is common to all gamified activities: they aim towards achieving a goal by using a set of challenges and a reward system, some concerns did arise regarding its efficiency and ethics.

However, for those organizations that want to adapt to the requirements of the global market, the need to innovate through gamification could be a trend to adopt in the coming years.

2. Case study: online retail site Shopbop.com

An essential purpose for a gamification model is to generate motivation for its users. In the increased competition environment that companies operate nowadays, as well as in the online space where users can be distracted by various stimuli, the gamification model must be catchy in order to build emotional attachment and motivate the individual to remain inside and "play". This "playful" concept has proven to be efficient in improving consumer retention as well as consolidating sales also in the online clothing retail domain. The online clothing and accessories dealer shopbop.com started its activity in 1999 as a physical store, later closed, and is now part of Amazon.com, as of 2006, catering for the fashion needs of consumers in over 100 countries, according to the official site. Since 2017, the revenue of the organization has increased from one year to another, according to eCommerce Revenue Analytics (2020) and one of the innovative marketing tools implemented by the business is the gamification model.

The user experience on the site contains certain specific gamification elements, such as: users can choose an avatar to represent them, they can share their experience with their social group through a social network, like Facebook. There is also a system of achievements related to the number of purchases and the amount of money spent. Each user receives points depending on his activity, he can advance through levels, named after precious metals, from 'Bronze', continuing with 'Silver', 'Gold' to 'Platinum' as the top level. Consumers gain badges for recognition and are awarded benefits such as surprise discounts, first-to-know sale access, and birthday treats, according to the site information. Furthermore, one can check his information at any time, track his progress and see how much more he has until the next level and compare it to his friends', thus satisfying also intrinsic needs of belonging to a group or recognition. The implementation of this innovative marketing tool has led to an increase in revenue for the fashion retailer during the past years, reaching \$187 yearly revenue in 2019, according to e-commerce revenue analytics.

3. Defining essential elements of a gamification business model

In the case of the analyzed site, the main customer and user of the gamification system can be characterized as a woman, Generation Y or younger that has a high level of education, is computer-savvy and has a medium towards high income. Hence, the need for a higher level

of service, for receiving improved value for purchases and the positive view towards the characteristics of the gamification system, as an innovative marketing tool.

Based on the gaming techniques identified in the shopbop.com business model analyzed, this study proposes a model for the basic elements in the user experience of gamification in an e-commerce organization. Building a game-specific architecture can be applied to any online organization, from tourism to goods, health or wellbeing services as long as the model includes game-specific elements and features of the gamification concept, such as: benefits, hierarchy, effort, rewards, leaderboard, social network, as seen in Figure 1. These can be further split into game related elements such as avatar, challenges, points, badges, etc.

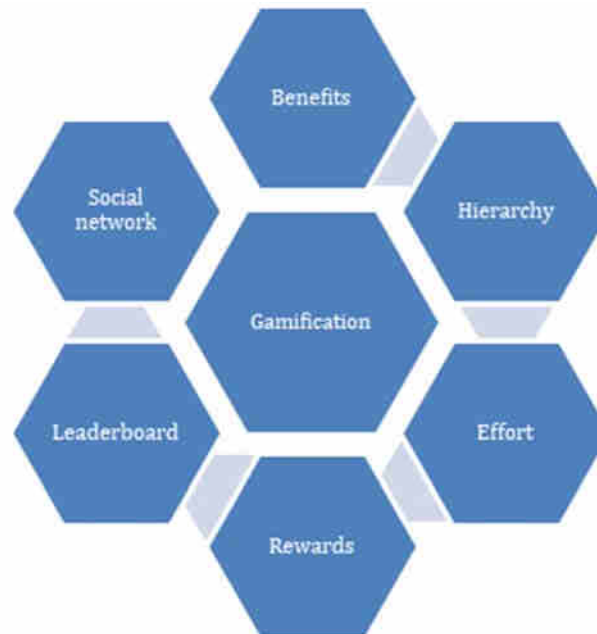


Fig. no. 1 Elements of a gamification system

Source: own representation

Defining the benefit system is another milestone that should be addressed in accordance to the business objectives of the organizations. These can be extra rewards related to the internal environment, participation in events, products or services, discounts or vouchers from partners, etc. The marketing strategy should be adapted to the overall company strategy and the domain of activity, as in the case of shopbop.com, the main concept was that of rarity, hence the names of precious metals attributed to the levels. As communication is an important part of the activity, it can be done through useful online tools such as social media, product placement through influencers, e-mails and mobile techniques, etc.

Analyzing the effects the gamification model has on consumer behavior can be done through qualitative research using questionnaires to determine the efficiency of the project, how to further adapt and to improve it.

For our paper we use the Baden-Fuller and Haefliger (2013) definition of a business model as “a system that solves the problem of identifying who is (or are) the customer(s), engaging with their needs, delivering satisfaction, and monetizing the value”. By analyzing these before mentioned elements of gamification and the problems that a business model solves one can observe gamification delivers on the following levels: the social network helps identifying the customer, benefits fulfill the role of engaging with the customer’s needs, hierarchy, effort,

rewards and leaderboard are delivering satisfaction, while the rewards received by the customers are methods to monetize the value.

Nowadays, achieving business performance is increasingly difficult, though the development of the Internet has brought a number of advantages, but has also raised challenges to the field of business making innovative tools such as gamification a real engine for growth.

Conclusions

Global social trends show an increase in use of the internet as well as a higher number of consumers with access to digital technology. Mobile provider application stores offer a multitude of IT applications and users are increasingly used to the mechanics and effort versus reward system of online gaming. In this context, businesses from retail to services focus on building their online marketing strategy, to gain a bigger share of the market and increase their results and are searching for innovative ways to attract clients. Gamification is one solution, inspired from the mechanics of online gaming. Used by organizations in diverse fields, from education, to health, or commerce, there is evidence that this innovative strategy can guide behaviours, and offer intrinsic and extrinsic motivations to users. Online retails site shopbop.com has successfully implemented gamification as an innovative marketing model and has improved its efficiency and results. Analyzing the site's strategy, a few conclusions were drawn regarding the main elements of a gamification user interface. The model should present a system of effort and rewards built according to the organization's marketing strategy. These can be real rewards or emotional rewards related to intrinsic motivations. Regardless of the choice, the consumer needs to be informed about his position in the hierarchy and to have available a social online group to communicate his progress and share information. This innovative strategy caters to the human need of leisure and fun while bringing positive results to all stakeholders, especially to organizations implementing it.

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THE FOOD-LOOP: TACKLING SUSTAINABILITY ISSUES THROUGH A NORMATIVE APPROACH. A BREAKFAST-BUFFET CASE STUDY

Alina Maria Vieriu¹ and Andreea Fortuna Şchiopu²

^{1) 2)} *The Bucharest University of Economic Studies, Romania*

E-mail: vieriu.alinamaria@gmail.com; E-mail: andreea.schiopu@com.ase.ro

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Abstract

The paper reviews the impact of food waste in hotels and describes the results of a study which could impact the sustainable management of it. This subject represents a big concern in the hospitality industry, especially in the food and beverage operations where plate-waste is a real problem. Here, we aim to study how much food-waste comes from the plate when hotels use the buffet service. This type of service has the advantage of catering to large groups with limited personnel, but it could drive the plate-waste based on its arrangement and abundance. The authors conducted a study in a 3-star hotel to determine the quantity and cost of plate-waste at the breakfast buffet, to evaluate the effectiveness of normative messages on consumption behavior, to determine if some demographic variables such as gender affect the food waste behavior, and to identify the main causes of food waste. The authors conducted an interview with the hotel manager, used observation, and organized an experiment with hotel guests attending the breakfast buffet service. The study revealed that average waste per person during breakfast time is 20 grams, normative messages affect consumption behavior by reducing plate-waste, and there is a correlation between duration spent at breakfast, return for refill and gender, men having a greater occurrence of returning to the buffet and women spending more time at the table. Last but not least, the customer was seemed to be the main reason why waste exists because of its mindset and “ignorant” behavior.

Keywords

Food waste, plate-waste, tourism, sustainability, normative messages, hotel

JEL Classification

L83, Z32

Introduction

As different factors contribute to the environmental damage, ranging from building construction, transportation to globalization, one cannot neglect nor dismiss that tourism has

its own impact with some special consideration, in regards to food-waste from hotels and F&B. Past studies found that these two produce significant amounts of food-waste both from the consumer side as well as the service-units. Managing the waste from their units is much easier for hotels than managing the waste generated by their guests. Therefore, the biggest challenge lies within the guest behavior. Further research is needed to assess this issue and its possible solutions.

Through the perspective of a 3-star hotel, this paper seeks to find to what extent the waste affects the sustainability of tourism and hotel's operations, what costs are involved, and the barriers stakeholders encounter in adopting eco-practices. We assume that buffet services are more wasteful than other menu types as a result of consumers' behavior. Thus waste from leftovers (i.e. plate-waste) will be considered the major problem. We hypothesize that plate-waste behavior can be reduced through normative messages.

Literature review

The idea behind a sustainable tourism development (Sharpley, 2009) is that it needs to deal properly with the growth of tourism while minimizing its adverse effects. Without a sustainable development in the future, if not preserved and protected, landscapes, natural attractions will no longer represent a motive for traveling and as a result the tourism industry will slowly cease. Therefore, it is vital for shareholders to acknowledge and take responsibility for the damage the touristic activities have on the surroundings as they may have an important role to play in sustaining tourism's operation.

Nonetheless, they aren't eager to it. One reason that could prevent hospitality actors to fully engage in sustainable development is the increase in operating costs (Selin, 2018). Implementing sustainable programs means more costs and the common misconception is that some may think the return on investment takes too much time therefore not being profitable (Sloan et al, 2009). Additionally, Jauhari (2014) noted that tourism sector isn't just a constant eater of resources, especially limited ones but also shows little concern regarding food – waste, a worldwide issue more common than actually thought. Waste can occur in households, supermarket, production and harvesting phases as well as in the hospitality sector and food and beverages services.

Every year, globally an amount of 23-billions tons of food is produced. Accordingly an estimate of 1.3 billion tones or 30-40% of food is either wasted or lost with an economic value of around \$1.2 trillion (Food and Agriculture Organization, 2011). These numbers can be translated into increased scarcity level of food supply and gas emissions. In the food-service sector the situation is no different, where it accounts for 11 million tones and there is considerable uncertainty around that estimate, compared to all the others, with the number possibly being higher (Waste and Resources Action Programme, 2013). People traveled a lot and that gave them the opportunity to taste different cuisine and assess difference, they understand what a quality meal is and how much of important role it plays their touristic experience (Davis, 2016). In F&B services food waste can happen in four ways: **pre-consumer** (waste occurring in the kitchen during preparation, such as spoiled and never reach the consumer plate), **packing, storage** and lastly the **post-consumer** known also as plate-waste (Sloan et al, 2009).

Concerned with this issue some researchers have conveyed some studies to see how much the food-waste comes from the plate as well. In a study lead by Ling-en Wang et al (2017) in 4 cities from China at different restaurants it was found that the average plate-waste for tourists amounts 103 grams/person. Other study (Eriksson et al, 2017) applied on a sample of 30 food and beverages units in Sweden revealed that an estimate of 25 grams of food waste comes from plate. While the research in this area is restrictive (Silvennoinen, 2015) these studies indicated that plate-waste signifies indeed a problem.

While already stated that food waste from plate is concerning, the remaining question is which type menu is more wasteful, buffets or à la carte? Unsurprisingly, buffets meals are very well appreciated by the consumers because of the freedom of choice and low-risk, being an easy way of enjoying different foods without much effort and consideration. Unlike à la carte menu, where the guest is being served by the personnel, the buffet is considered to be self-service, where customers serve themselves and carry it to the table, this can attend large groups with limited personnel (Davis, 2016). However, the downside is that buffets pose as potential drivers of the plate-waste because of their food display of abundance; it enhances the guest senses and in a way or another it gives him the false ability of taking as much food as he can without any consequence.

Scholars Pirani and Arafat (2015) conducted a study in a hotel chain form UAE and discovered that the plate-waste which comes from buffet service accounts 14% of the total hotel food waste in comparison with the a la carte menu, where only 4% of waste comes from the plate out of the total food waste. Another significant study run by Selin (2018) at a Swedish hotel concluded that the guest wasted on average 20 grams of food at breakfast buffet.

In order to combat this issue, in one of his studies, Parfitt et al. (2010) suggested that behavioral approaches pose a great potential in managing the food-waste caused by tourists. Cialdini (1991) introduces the focus theory of normative conduct which governs two types of norms, (1) injunctive and (3) descriptive, each one has the ability to alter behavior based on how salient is the norm. Descriptive norms represents the result of group behavior, more specifically how people generally behave in a situation and influence action of one individual through social information, stimulating imitation of other's actions. Goldstein, Cialdini, and Griskevicius (2008) showed that using descriptive norms (through messages) can have an impact on guests' behavior. They reached this conclusion when they implemented a towel-reuse program experiment where approximately 75 per cent of hotel's tourist had reused the towels when the descriptive messages were displayed.

The literature showed that food-waste is a concerning problem, its impact being both environmental and economical with hotel and F&B services producing significant amount of waste. Scholars and researchers stated that buffet services are potential drivers of waste and implied that guests have a play in it and a solution for preventing is through a behavioral approach, using descriptive messages or sign.

Research methodology

Food waste is a global challenge at every industry level and hospitality sector makes no exception. The overall purpose of this study was determining the plate-waste, from the buffet, situation at a 3-stars hotel located in Bucharest, Romania. Therefore the paper's research objectives were the following: (1) to determine the quantity and cost of plate-waste at the breakfast buffet, (2) to evaluate the effectiveness of normative messages on consumption behavior, (3) to ascertain what is the relation between duration spent breakfast-table based, return to the buffet based on one demographic variable, that of gender and lastly (4) to identify the food-waste situation and its causes in the hospitality industry through the perspective of a 3-stars hotel.

In this research the population was comprised of the guests, women and men, which stayed at the 3-stars hotel and took part in the breakfast buffet. For the observation guide a convenience sample ($N_{\text{female}}=38$ and $N_{\text{males}}=40$; $N_{\text{total}}=78$) was utilized and for experiment a random sample ($N=140$ – control group, $N=132$ – treatment ; $N_{\text{total}}=172$) was used. For the interview, a sample of one person was used, the hotel's manager. In regards with the instruments, three types were used: a before and after experiment questionnaire, an interview guide and an observation guide. The interview guide was a semi-structured one, where 8 questions were conveyed based on the research's objective. The interview was a one-o-one conducted on 16.04.19 with the manager of the hotel and lasted around 30 minutes.

The experiment was a pre and post one, which means that two randomized groups were analyzed and on one of them a treatment was to be applied. The premise was that any changes in the dependent's variable is somewhat (explained) caused by the changes made in the independent variable. The time-frame of this study was on a 4 day period (12-15.04.2019). The amount of plate-waste was weighted by the breakfast personnel and the treatment was applied in the last 2-days where a normative message was created and displayed at the buffet (appendix no. 1).

An observational study means that information about a phenomenon is observed and the data is recorded. The observation method was applied during the treatment period at the breakfast where time spent at a table and how many returns a guest will do was observed. The data regarding the gender was provided by the hotel through a sheet of breakfast participants each morning.

Data analysis for the experiment and the observation guide results has been made using the software SPSS (SpSS, 2018), for each, a different statistical test was performed. For the experiment, the independent t-test was used testing whatever there is or is not a significant difference in averages of plate and cost waste between the treatment and control groups. Observation's guide analysis was done by comparing the means using crosstabulation and Pearson's Chi Square test of independence. By comparing the observed values against the expected ones it was determined if variables are independent or dependent of each other. This test uses categorical values and the following ones have been tested: gender (independent), duration at the table and frequency of return to the buffet (dependent).

The data for the interview was analyzed using a general inductive approach through coding using the software NVivoPlus12 (Nvivo, 2019). Through coding the interview's transcript 3 final categories emerged with some other smaller categories or sub-group. Segments of transcript were coded using "In-Vivo" and "Initial" codes in the first cycle of coding, serving as an exploratory phase. Later on, in the second cycle "Pattern" and "Focused" coding processes were employed.

Results and discussion

For the experiment it can be seen (table no.1) that the difference in the sample mean plate-waste/person between control group and treatment group was 6.45 grams, with a 95% confidence interval from 5.88 to 7.01 grams. T-test statistic was 22.7, with 172.2 degrees of freedom and an associated p-value of $p < 0.001$. For the cost of waste/person, the recorded difference between the sample mean in control and treatment group was 0.19 Lei and with a 95% confidence interval from 0.17 to 0.20 Lei. The value of t-test statistic was 22.48 with 176 degrees of freedom and the corresponding $p\text{-value} < 0.001$.

Table no.1 Independent T-Test for before and after experiment

	t-test	Degrees of freedom	Sig	Mean difference	Lower	Upper
Plate-Waste	22.70	172.20	.000	6.45	5.88	7.01
Cost of Waste	22.48	176.17	.000	0.19	0.17	0.20

Source: Authors' own work

Regarding the plate-waste per person the following alternative hypothesis has been tested: (H_1) *Normative messages affect consumption behavior by reducing plate-waste*. Since our $p < .001$ is less than the significance level $\alpha = 0.05$, we will reject the null hypothesis and accept the alternative hypothesis concluding that (a) there was a significant difference in mean plate-

waste/person between control group and treatment group ($t = 22.705$, $p < .001$) and (b) the average plate-waste per person for control group was 6.45 grams higher than the average plate-waste/person for treatment group.

The alternative hypothesis concerning the cost-waste/person was: (H_1) *Cost of waste will be reduced if the plate-waste is*. As our $p < .001$ is lower than significance level $\alpha = 0.05$, the null hypothesis will be rejected and the alternative hypothesis will be accepted, therefore stating that: (a) There was a significant difference in cost-waste/person between control group and treatment group ($t = 22.48$, $p < .001$). (b) The average cost-waste per person for control group was 0.19 Lei higher than the average cost- waste/person for treatment group

Table no. 2 Chi-Square for Gender * Return and Gender * Duration

	Variables	Asymptotic Significance
Pearson Chi-Square	Gender * Duration	.003
	Gender * Retrun	.001

Source: Authors' own work

For the observation guide, the null hypothesis assumed that (H_0) *Duration and return is independent of gender*. Results regarding the relationship between gender and duration (table no. 2) based on the Pearson Chi-Square, shows that "Asymptotic Significance" = .003 and if it is less than $\alpha = .05$ then it means that residuals vary as a function of the independent variable. Second variables tested (table no. 2) gender and return, shows that "Asymptotic Significance" = .001 and if it is less than $\alpha = .05$ then it means that residuals vary as a function of the independent variable. Therefore, the chi-square is significant thus H_0 will be rejected and accepted the hypothesis that both duration and return are related to the gender. Concluding that, there is a relationship between the variables. More specifically men had a greater occurrence of returning to the buffet and women spend more time at the table.

The interview assessed the research objective of identifying the state of food-waste and its causes from the perspective of a 3-stars hotel. Challenges faced in developing sustainable practices are mostly related to "*money*" because these projects come at a cost, "*human resources*" since staff comes and goes and the design of "*the system itself*" (i.e. government and public authorities) is made in such way that it offers no help nor guidelines. Even though, it was revealed that waste management is well maintained by the hotel and food waste from preparation is at low levels, that is because of a proper management therefore waste is not an issue in the "*kitchen [...] as staff pays attention*". For the hospitality's food-waste situation in Romania, the main drivers are "*both the hotel and customer*". The **customer** especially due of their **mindset** towards buffet services, where guests tend to waste more because the food is available at a lower price whereas "*if it's a la carte, the customer orders depending on how much money he has*" and displays an "*ignorant behavior*".

The **waste** in Romania is described as "*a complex matter*". The problems lies at the **buffet** services since "*every buffet is going to generate waste at some point*", as a result of mass preparation of food. In "*the a la carte the food comes in smaller quantities*" compared with the self-service stands and guests have at their disposal to take as much food as they want without suffer any consequence.

Discussion. Study resulted data revealed that average waste per person during breakfast time is 20 grams. These data findings were somewhat consistent with previous research which found (Eriksson et al, 2017) that an estimate of 25 grams of food waste comes from the plate, however the numbers differ from the studies of Ling-en Wang et al (2017) and Silvennoinen (2015) in which the amounts were 103 grams / person and 153 grams per portion thus higher. The findings from the pre and post test were statistically significant ($p\text{-value} < .005$) in order

to support the alternative hypothesis. Success of normative messages are based on the theory of social norms where Cialdinin (1991) offers a plausible explanation, that is a descriptive normative message acts as a model in showcasing what is the best course of action for people to behave in a situation.

The observation guide was used to answer if there is a relation between duration spent at breakfast and gender as well as the relation between the return to the buffet for refill and gender. Findings showed there is a correlation between duration, return and gender. The p-value from the Chi-Square was $> .005$, which allowed for both the null hypothesis to be rejected and concluded that both variables are to some extent depended on the gender. Scholars Bell and Pliner (2003) proceeded to say that people who spent more time at a table in social constructs tend to consume more food thus more waste.

The theme “drivers and implications of food-waste” emerged from the coding process through the inductive approach. The customer was seemed to be the main reason why waste even occurs, because of its mindset and “ignorant” behavior. This assumption of an irresponsible behavior is sustained in a study conducted by Dolincar and Grun (2016), it was revealed that travelers generally don’t want to bother with any sorts of responsibilities and just want to relax. Nevertheless, the situation at the hotel was described as being under control thanks to the personnel, who have the task of not wasting. Sloan et al (2009) have described the personnel as the most important tool in preventing waste. And in the same way it was described by Selin (2018), that most of the hotels don’t engage in sustainable practices because of operating costs, so did the manager revealed that money are a barrier and such projects are expensive.

Limitations

In regards with the limitations, the research can be considered limited as it mainly focuses on one specific hotel from one particular region. The limitation of it translates that the results obtained cannot be generalized to the whole population since it is limited at a single study case. Additionally, another limitation is the fact that the data collected from the experiment was on a short period of time two days for pre and post-test each, and for more accurate results a longer period would have been required. Participating in any form of a direct observation, there will always be the high-level risk of potential some sort of error either observer’s subjectivity or narrow perspective. Lastly, this paper serves as a point in time and as well as place of understanding some events and challenges, but it could be used as a starting line here for a future research. The findings of this interview have the limitations of only understanding the challenge through a single perspective, further research can be expanded to assess the opinions of other F&B and hotels managers or employees.

Conclusions

The scope was to understand the extent of food-waste situation in the hospitality sector and its causes. The paper assumed that buffet services are more wasteful consumers’ irresponsible behavior thus waste from leftovers (i.e. plate) will be considered the major problem. Although this study had its limitations and weakness, it successfully responded to all of the research objectives stated, thus the scope of determining the situation of plate-waste was attained. At the 3-stars hotel the waste comes from the consumers and in a smaller proportion from management. These issues can be resolved with the display of a message sign at the buffet. Nevertheless, it is recommended that the future investigations should extent their period as well sample size, for accuracy and credibility purposes.

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Appendix no. 1 Normative message at the breakfast buffet



A NEW CLIENTS' PARADIGM IN PROFESSIONAL AUDITING SERVICES FIRMS. CAN THE AUDITOR – AUDITEE RELATIONSHIP SURVIVE?

Șerban Toader¹

¹Ecole des Ponts Business School, Paris, France

E-mail: serbantoaders@outlook.com

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Abstract

Professional auditing services firms are under intense external public pressure to enhance quality and independence. Independence is essential in ensuring public trust in the financial statements of their clients. At the same time, these firms also aim to maintain robust financial stability in terms of revenues and profitability. This teaching case presents the story of Alan, a competent Audit Director in an international professional auditing services firm. Alan contemplates the best approach to both maintain client relationships and ensure independence.

Keywords

International audit firms, independence, audit regulation, client importance, change management

JEL Classification

M42, K23

Introduction

On a mild Friday evening in January 2020, Alan, an audit director at a large international professional auditing services firm, was in the airport lounge again, on his way back from a regional audit conference. A useful place to meet people he mused to himself, especially as his Firm's brochures were on display and his photo was in them. However, travel is not as exciting as some think. Even though the airline he flew was his audit client, their customer service leaves room for improvement. The flight was delayed; there was no explanation, and the airline staff seemed more interested in their own problems than in caring about the passengers.

This made him think about his business. As an audit director, he was expected to do competent audits, develop people, maintain existing client relationships, win new clients, and meet financial targets such as revenues and profitability. More recently, it was the relationship with audit clients, which kept him awake at night. He worked with many of his clients for a long time and maintained a strong personal and professional relationship with key finance people.

Could it be that he was too close to them and may not be independent anymore? Ever since he joined his present employer, he worked hard to become a trusted advisor for his clients. He told his team the same thing. However, he knew the auditors must play according to different rules than a typical company. So, he asked himself, as an auditor, how far shall you go for a client and maintain your independence at the same time?

What is an independent external audit?

When he joined the Firm, he learned that auditors are part of the accounting profession, one of the oldest professions in the world (Retief, 2012). He read about and then experienced how the profession evolved in time. Following the Great Depression of the 1930s, the regulators in the United States requested that the financial statements of public companies shall be examined by external, independent accountants (also called auditors) to ensure transparency and increase trust in the capital markets (Niemeier, 2007). Mandatory audits of public interest entities are now required in developed and emerging economies alike. To ensure consistency and quality of the audit services amongst various auditors and countries, the profession and regulators have developed professional auditing standards such as International Standards of Auditing published by the International Federation of Accountants (IASSB, 2017).

In addition to the technical competence, the standards requested auditors to be independent of their clients in order not to influence or bias their audit opinion on the financial statements. If there are doubts regarding their independence, their audit opinion and the financial statements may not be trusted by investors and financial markets, confidence decline, and a market economy could not be ultimately functional. Auditors must comply with the professional Code of Ethics, which required them to be objectives and to demonstrate integrity in their personal and professional life (IFAC, 2006).

The large international professional auditing services firms are multi-disciplinary: audit, tax, advisory. Initially, they offered tax and advisory services to their audit clients, which subsequently raised questions about the independence of auditors. If clients are paying more for the non-audit services than for the audit services, how could the auditors be independent? The situation culminated in the early 2000s in the Andersen/Enron scandal, which ended with the shocking demise of Andersen, at the time, one of the Big 5 international accounting firms. Subsequent legislation in the U.S., such as Sarbanes – Oxley aimed to regulate better the auditors. All the remaining Big Four firms* separated their consulting business (except for Deloitte) and introduced stricter independence criteria.

The auditors seemed to have learned their lesson, and things went well for several years in the first decade of the 2000s. The firms increased their audit fees following Sarbanes Oxley, and the audit was the central pillar in terms of profitability and stability. In the meantime, the new requirements significantly restricted the firms' ability to provide non-audit services to audit clients. These were good years for auditors, remembered Alan.

Recent changes in the environment

Although the auditors were, in general, not considered responsible for the financial crisis of 2007 – 2009 and for the demise of financial institutions such as Lehman Brothers, the European Union regulators introduced a reform of the audit profession which came into effect on 17 June 2016 (The European Parliament and the European Council, 2014). The E.U. Audit Directive required the Public Interest Entities such as listed companies, banks, and insurance companies to periodically tender audit services and rotate auditors, prohibited many non-audit services, and introduced fee limitations for accepted non-audit services as well as stricter oversight by regulators of the audit firms.

* Big Four is the generic name by which the public refers to the largest international accounting firms, which include Deloitte, EY, KPMG and PwC.

While the firms remained multi-disciplinary (audit, tax, advisory), the audit services become highly regulated, high-cost service. They started to invest and develop their tax and consulting services offered to non-audit clients, which become more preeminent in the firms' market offering. And yet, a string of new scandals involving auditors hit the media again. The auditors were once again in the eye of the storm.

Changes in the Firm's independence approach

His thoughts were interrupted by his iPhone (again). A meeting request - marked urgent - from his new (acting) head of the audit function. Alan had a very good professional and personal relationship with the former head of function, Anne. In fact, some colleagues complained that Anne showed favoritism to Alan. Alan had brushed this off as small-minded, petty gossip. But now his circumstances have changed.

David, the new head of function, was very different; brusque, self-opinionated shoot first - ask questions later. Alan did not realize how much his world would also change when Anne announced she would be going early on maternity leave. Alan prided himself on being good with clients. On planning to advance his assignments. On delivering good service to his clients. Maybe he spent a little too long on some engagements, but he never got complaints from his clients. And they come back to him, year after year, for more work. What could be wrong with what he did?

Alan recalled his recent discussion with David. A colleague's assignment was behind schedule as the process of clearing risk management and independence procedures took longer than expected. The client was becoming impatient. He was not sure what he could do expedite the process, and the client was very important (according to David). So, Alan had re-arranged his schedule to help the colleague. Only to find his colleague gets praise, and David made remarks about Alan's being unfocused.

David wanted a meeting on Monday morning to discuss the implementation of the Firm's plans for stricter independence and risk management. The recent regulatory developments increased public interest in the audit profession, and the reaction of competitors put the Firm on a burning platform. The Firm's revised approach included a more thorough, periodic review of all relationships with audit clients, new client and engagement acceptance procedures, periodic rotation of the audit personnel, etc. Such discussions were not new for Alan, but it seemed that now the Firm was more committed than ever. Some of the changes made sense to Alan, but he knew that some clients would not be delighted by what they see an increase in the Firm's bureaucracy.

Alan knew that the meeting would also be about rotating out some of his audit clients. He was anxious about the prospect for two reasons. First – he had a long and strong relationship with them, and he would not like to see that such a relationship is weakened or, worse, lost. Second – those clients generated significant audit fees. If those clients and fees were moving to another colleague, how was he going to replace them? Managing a substantial volume of profitable fees was crucial if he wanted to become a partner. Was it fair that his successful, well-organized effort to keep and maintain relationship should be sacrificed to help those who were not as good as him in maintaining a relationship even if they performed a competent audit? Perhaps he will get new audit clients in exchange, but he had no connection with them. He will have to invest a lot of time and effort with people he did not know and may not like him.

But times are hard. Maybe things must be changed. Alan has had several years of promotions, salary and benefits increasing, work knocking at his door, cherry-picking the best clients. Getting the work done was what mattered. However, now more and more clients were asking quotes from competitors, organized audit tenders while the Audit Committees (and not the management) were the most influential on the auditor's selection. While Alan knew the

members of the Audit Committees of his clients, he had a much stronger relationship with the finance executive management.

Clients' initial reaction

Did he imagine it, or do the procedures to clear risk management and independence matters already seem to take longer? And more questions were asked by the internal risk management bureaucrats about the quality of financial reporting and relationships with clients! Colleagues from other functions were suddenly interested in meeting Alan's audit clients to "keep the client for life" to use the office buzz phrase. He knew that some secretly hoped that the client would change auditors and then have better opportunities to sell their tax or advisory services, which were prohibited before.

Alan's flight was finally called. As he walked to the plane, he thought about his colleagues and worried that they were not clients conscious at all. Last week he had had dinner with Peter, an old college friend who was a senior finance manager with one of the Firm's audit clients. Peter was always positive about the Firm in his conversations with Alan. But as the drinks had flowed, Peter had let slip that he had made three phone calls in the past two days to Claire, one of Alan's colleagues, and then sent an email to check why it was taking so much time to finalize the independence procedures. But Claire still had not called back. This made Alan upset. He understood Claire was busy, but why couldn't she just have taken five minutes to call Peter and explain about the new risk management and independence procedures? Alan also knew that as part of the audit rotation legislation, his competitors from another firm had been talking to Peter about their audit capabilities and efficient risk management procedures. If Claire did not return Peter's calls, this would not help the Firm's efforts to maintain and protect the audit relationship.

Thoughts about the Monday meeting

What will Monday's meeting achieve, Alan wondered? Maybe it was time for a grassroots review of what we do and how we do it, Alan mused. From time to time, this was necessary. And the public and media seemed more and more interested in the profession. Alan decides one point he will raise is the need to be in the market; to be visible to clients and targets; to show them that the Firm is strong and successful and keen to win work, that auditors are not a bunch of people scarred by their own shadow. Clients have their problems; they do not care about ours. They just want help, results, the job done.

Alan and his family had been on a weekend break last month with Paul, another college friend, who worked for a rival company. As Alan's and Paul's families had relaxed together by the pool, Paul and Alan compared how their two companies were weathering the recent regulatory inspections. Last year was rough, Paul had said. Nobody knew if they would pass independence regulatory tests. But while there had been comments from the regulator, Paul had survived, and he now felt more secure about his future. His Firm was now much more focused on quality and independence, Paul had said. They have communicated professionally with their clients; reputation has improved and has not lost significant revenue. Alan had wondered at the time how long his Firm could go on putting off making similar tough decisions.

Alan recalled the conversation he had with Gary, the Ethics and Independence Partner, last week. Gary had emphasized that the regulatory outlook continued to be very difficult. "These are tough times, and not taking decisions is even tougher" he remembered him saying. There was no getting around the fact that the Firm needed to enhance its independence procedures. Competitors had already taken tough measures much earlier, and they seem to be more out of the radar of media. If Alan's Firm did not take steps now, it could lose its reputation and find it more and more difficult to maintain a good professional relationship with the regulators and with the other stakeholders. Alan wondered, though, whether enough of his colleagues

understand the position, or whether some are still in denial. Some were saying that media and regulatory interest come and go, like a pendulum, so there was no need to do anything. But it was clear to Alan that this was too optimistic.

So, David has asked for Alan's opinion before the meeting about how to effectively implement the new measures to enhance risk management and independence requirements but also retaining good clients. He then saw there was an attachment – an Excel spreadsheet containing his client's portfolio, with information about the duration of the Firm's audit mandate and a blank column marked "Proposed plan." Much work for the weekend, Alan thought.

From multi-disciplinary to audit only focus.

In the lounge, Alan met a colleague from the Advisory department, who was on his way to a client's pitch. He could not stop noticing his colleague's enthusiasm, which resembled his own not too long time again. They both were trained to consider success means strong client relationships, but it seems now they will take different paths.

As his plane soared into the night sky, Alan read the meeting request more carefully and saw that the Senior Partner of the Firm would also be there. This improved Alan's mood as he knew the SP was a fair and sensible person. Alan considered all the potential options and wondered if a direct discussion, all cards on the table, would be appropriate for the meeting. Finally, the food arrived. The friendly stewardess gave him an extra bottle of red wine. Alan started to feel better about the world. After all, he had got through bad times before, so why not this time again?

Teaching Objectives

The first proposed learning theme of this case is the Auditors' independence, followed by regulatory intervention and public expectations influence on strategic choices, which potentially leads to a more fundamental topic, Dealing with change and uncertainty. The participants will engage in an open and active conversation, lead and moderated by the instructor. The interactive character of the discussion will stimulate the participants to obtain a more comprehensive understanding of the proposed learning themes. They will use their critical judgment abilities to get a better theoretical and practical knowledge through both self-reflection while reading the case and the recommended additional literature and through the interaction with their colleagues and the instructor.

The participants, who identify themselves with Alan, will evaluate the situation and think critically about potential solutions and unintended consequences. While the case is specific to an industry and profession, it aims to put another brick in the bigger wall of knowledge of participants and to relate it to the adjacent space: the management of change.

Assignment Questions

1. Why ensuring independence, both in fact and in appearance, is important for building public trust?
2. What shall the audit firms do to keep independence and not lose business?
3. How could Alan support his firm in implementing the new independence requirements effectively?

Recommended Solutions and Answers

The first question, about the importance of independence, is more straightforward. The participants could find comprehensive responses in both academic literature and professional practice materials published by the professional accounting associations or by the professional auditing services firms. The participants shall become aware of the overall context of doing business and not only focus on key performance indicators such as profit or revenue. If

professional auditing services firms do not perform their business in an adequate ethical context, with integrity and building trust, there could be some short-term gains but no long-term business.

There is no ideal response to the question about independence without losing business. The participants shall review proposed models vehiculated by regulators, academics, and the auditing industry. For instance, the firms could separate the audit business from the rest of the company. They were already required in the early 2000s to separate their consulting business. The participants could discuss whether the separation of consulting enhanced or not audit independence. Other suggestions may include increasing or maintaining audit fees but with more investment in technology to keep costs under control. More ambitious proposals could be that the firms redesign their audit services or create alliances with tech giants such as Microsoft or Google to develop a different, more technologically advanced audits. The participants shall critically discuss the intended or unintended consequences of their suggestions.

The third question is about Alan. He is at an essential time in his career and could use the situation to self-reflect in a meaningful way. What would help him to advance his career-long and short term? Perhaps he shall enhance his risk management and independence abilities. He shall cultivate the relationship with existing clients to ensure a smooth transition to another colleague. Other suggestions may include a focus on winning new audit business and speeding up the process to get acquainted with his new audit clients.

Target Audience

This teaching case may be useful for several audiences. It has obvious relevance for professionals working in the audit industry who could resonate with Alan and his situation. The case could be included in an executive education program offered by professional auditing and accounting associations. It could also be tailored to the context of an individual audit firm and included in an internal training program such as an annual update training course.

The themes covered by the case could present relevance for other categories of stakeholders interested in understanding better the audit profession. Potential participants may include finance and accounting executives who have a day to day interaction with external auditors or non-executive members of Boards or Audit Committees of public interest entities who are required to communicate with auditors and be responsible for the relationship. Other participants may be regulators of financial institutions or public entities whose role is to oversee the stability of financial or capital markets and auditors' regulators who could better understand the context they supervise.

In a broader academic sense, the case could be addressed to students in undergraduate accounting programs, and Master programs students specialized either in finance/accounting or business administration in general. However, the teaching approach shall be different. If used for undergraduate students, the case should focus more on understanding basic concepts such as independence. For the more advanced students, the case could be extended to all the proposed themes.

Teaching Plan and Discussion Management

The case study will be provided to the participants one week in advance so that they have the necessary time to read and reflect and prepare their initial thoughts. As the role of the instructor is crucial, he must obtain a profound understanding of the case and related literature and prepare well in advance of the discussion. As part of his preparation, one suggestion is to discuss the case and the teaching plan with a professional practice or academic colleague, familiar with the topic, and incorporate their initial feedback.

The logistical arrangements must be dealt with before the class discussion. Preferably, the class set up shall be arranged in a way to stimulate active discussion and not to allow some people to hide or withdraw from the conversation. Perhaps a technician may be needed to provide technical support for aspects such as the proper functioning of a computer, PowerPoint, Wi-Fi, projector, A.C. Once the participants enter the class and take their seats, the instructor shall announce the rules requiring active participation and discourage any potential distraction.

The proposed duration of the case discussion is of 90 to 120 minutes based on the below sequencing. The main instrument to be used by the instructor will be asking open-ended questions. He must be alert to intervene to either reenergize the discussion, if the case, and summarize the issues discussed before moving to the next topic.

Related References and Reading Materials

The instructor must be familiar with the theoretical and practical themes covered by the case. He may share the suggested bibliography and references with the participants before or after the discussion.

Understanding the context

The instructor may refer to several recent articles in the media which reflect that the professional auditing services firms are under intense regulatory and general public pressure to enhance the quality of audit services and independence (Marriage, June 5, 2019), (Pooley, May 16, 2019), (Giles, April 18, 2019), (Trentmann, June 30, 2019) etc.

Auditor Independence and Public Trust

Professional auditing services firms are essential in ensuring the confidence of the financial markets and the proper functioning of a market economy. Through their audit, they provide the trust in the financial statements of their clients by a large variety of stakeholders (Niemeier, 2007). Independence of audit firms from their clients is considered an essential aspect in meeting public demand (Harris, 2016), (ICAEW, 2019), (Allen, 2018). Several accounting scandals raised questions about auditors' independence and audit quality (Duska, Duska and Kurry, 2018). Causes for Unethical Behavior in business have been well documented (Wedell-Wedellsborg, April 2019). High-level representatives of the audit industry recognize that their approach to delight the clients generated unintended consequences (Smith, August 14, 2019). On the other side, recent academic research shows that if auditors are too strict with the clients, they get penalized (Cowle and Rowe, 2019).

Disclaimer

Alan and his circumstances are fictional, and any resemblances to real persons or events are purely coincidental. Serban Toader has developed this teaching case as part of his Executive DBA Program at Ecole des Ponts Business School. It aims to represent a basis for class discussion rather than to illustrate either effective or ineffective handling of a business situation.

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TOURISM FISCAL AND MONETARY POLICIES ADJUSTMENTS DURING COVID-19 PANDEMIC

Oana-Diana Crîșmariu¹, Ionela Butu², Adrian Bogdan Curteanu³ and Iulian Tenie⁴

^{1) 2) 3) 4)} *The Bucharest University of Economic Studies, Romania*

E-mail: oanadianacrismariu@gmail.com; E-mail: ionela_butu@yahoo.com

E-mail: adrian.bogdan.curteanu@gmail.com; E-mail: iulian_tenie@yahoo.com

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Abstract

The beginning of 2020 has brought the whole world into a difficult situation on all levels. The global pandemic caused by COVID-19 has led many states to adopt radical decisions and many sectors have been critically affected, including tourism. *The present paper is made of two main components:* Comparison of the impact of value added taxes (VAT) rates in the Tourism Sector in European Union and Comparison between the COVID-19 measures taken by top 3 European countries and Romania.

The aim of this investigation is to study the importance of fiscal and monetary policies in tourism and to analyze the measures taken by states with the most tourists in the European Union and Romania. Also, this paper can be considered a first part of a study on the impact of COVID-19 on tourism in which the measures taken during this period are analyzed. The next part of the study will analyze the quantification of those measures and their expected impact on the general government deficit and debt in each of the states studied in the current paper.

Keywords

fiscal policies, monetary policies, tourism policies, COVID-19, VAT reduced rates

JEL Classification

H21; L83; Z32

Introduction

Tourism, which is constantly developing in recent years, is considered in the European Union the third major economic activity. It has been noted for its positive impact on government revenues, economic growth, employment, and social development. Historically, since civilization began, there have been taxes (Alain Charlet and Jeffrey Owens), thus the value

added tax - VAT, at about 65 years, is a relatively new tax. At the initiative of Maurice Loire, VAT was first introduced in France in 1954, and in the next years it was adopted by all Member States, with the same purpose, that of increasing revenues. (Ionela, Porumboiu, Ghețu & Brezeanu, 2019). Tourism is responsive to taxes, also it cannot be exempted from them because it is an important source of budget revenues. The present paper is made of two main components. The first one presents the implication of level of taxes in tourism sector, precisely VAT reduced rates applied to the key goods and services relating to this sector. Tourism is responsive to taxes, but it cannot be exempted from them because it is an important source of budget revenues. Therefore, the decisions on taxation in tourism, must be preceded by an extensive research and analysis of their impact on tourism and the budget. Also, we presented a panel of top 10 countries according to the 2017 WEF Tourism Competitiveness Index, the VAT reduces rates applied in tourism sector, the change of VAT Revenue and the VAT thresholds. The second component of the paper highlights a comparison between the COVID-19 measures taken by top 5 countries and Romania. As the COVID-19 pandemic continues to spread across the globe, ruining lives, communities and businesses, the European Union and its Member States are working non-stop to fight disease caused by coronavirus, COVID-19. Countries are facing a considerable strain and have taken steps to reduce, as much as possible, the negative economic impact of COVID-19 to tourism. The table provides an overview of fiscal and monetary measures taken in Romania and in top 5 Member States with the most tourists: France, Spain, Italy, Germany, Austria. The aim of this investigation is on the one hand, to review the appliance of VAT reduced rates in tourism sector, that are often used as a lever for reducing the tax burden on certain sectors, on the other hand, to analyze both fiscal and monetary policies taken, in order to emphasize the differences in the states with the most tourists in the European Union and Romania.

Literature review

Indirect taxes are those levied exclusively for the sale of goods, services, import and export. These taxes are characterized by low collection costs, do not require going to pay them, are included in the sale price regardless of the income of buyers and are regressive.

Value added tax (VAT) is an indirect consumption tax paid by the "taxable person" to the revenue authorities and borne by the final consumer, as part of the price of the goods purchased. VAT is a multi-stage sales tax applied to all stages of the economic circuit, respectively: production, services and distribution, up to final consumers, an indirect tax that is established on transactions relating to the transfer of property and service supplies (Avram, M., Avram, V., 2012). Furthermore, it is calculated by the difference between the following two amounts: the VAT collected (for sales) and VAT deductible (for purchases).

Tourism sector is a significant economic activity in the European Union with a wide impact on government revenues, economic growth, employment, and social development. Holidays and the expenditures associated (hotels, restaurants, on flights etc.) are significant elements of composing the tax base, thus related taxes are valuable for government revenues in many jurisdictions. Reduced VAT rates on consumption categories are already applied in majority of the Member States, therefore, the scope to reduce VAT rates to promote tourism demand is limited. Since VAT is borne by both residents and non-residents, it is created a significant tax base, so the reduction of rates can strongly influence the VAT revenues.

European legislation is based on Directive 2006/112 / EC (further VAT Directive) on the common system of value added tax, which regulates the actual scope of the tax, as well as the application of a minimum standard rate of 15%. For several reasons such as economic growth, public debt, budget deficit, targets set at European level cannot be achieved collectively, national governments have the freedom to take their own measures, but they must be in line with the principle of subsidiarity set out in the Treaty on the European Union. So, Member States have the option to apply one or two reduced rates that shall be minimum 5% (Article

99 VAT Directive) and may be applied to goods or services listed in Annex III of the VAT Directive but not to electronically supplied services (Article 98(2) VAT Directive).

Impact of value added taxes (VAT) rates in the Tourism Sector in European Union / General aspects regarding Value Added Tax – VAT in European Tourism

Considering that neither the VAT rates nor the exemptions are fully harmonised, the common system of VAT should lead a high degree of neutrality in competition, such that within the territory of each Member State similar goods and services bear the same tax burden, regardless the length of the production and distribution chain. (Directive 2006/112/CE). However, in EU, only about two thirds of total consumption is subject to the standard VAT and the other third being subject to exemptions or reduced rates (Copenhagen Economics, 2007). VAT is often used as a lever for reducing the tax burden on certain sectors, in order to stimulate the specific sectors. In most of the countries, reduced rates are applied for tourism and to the key goods and services relating to tourism.

The World Tourism Organisation (WTO, 1998) identified around 45 different taxes and fees related to tourism sector. Also, Gooroochurn and Sinclair (2003) highlighted that from these taxes, around 30 are created by tourist guests and 15 are born by hotel and other accommodation companies, although the change may differ depending on demand and supply price elasticity (Fish, 1982). VAT is a one of the taxes that burden business activities in hotel industry and in tourism. It is mostly included in the category of hotel accommodation and restaurant and in all other sections, such as: transport of passengers, admission to sporting events or admission to cultural services.

Deloitte and Touche's (1998) study pointed out that high taxation lowers the revenues of hotels and tourism, while the decisions of the tourists about the destination of a trip are strongly influenced by increasing or decreasing the tax rate. According to the "Study on reduced VAT applied to goods and services in the Member States of the European Union" (Copenhagen Economics, 2007), if there is a change in rates it may take up to two years for the full effect to be achieved, while others, for example Wason & Nevin, with more conservative assumptions suggest that would take four years to obtain the full effect (Cut Tourism VAT, 2012).

Most of the EU countries make use of applying reduced rates to the key goods and services relating to tourism. Table no. 1 gives a overview of the VAT rates in the Tourism Sector in top 10 EU Countries at 1st July 2019. We have chosen the top 10 countries relating to WEF Tourism Competitiveness Index corresponding to 2019 (The Travel & Tourism Competitiveness Report, 2019). We included in the analyse United Kingdom, considering that was part of European Union, in the period analysed.

The first remark we can make from Table no. 1, is that in the analysed countries the so-called VAT reduced rates are applied to almost all key goods and services relating to tourism, excepting UK, which applies a reduced rate in only one category, the transportation of passengers. More than that, many countries apply zero rates or exemptions in at least one domain related to tourism. For example, admission to cultural services is exempted in most of the states, such as: Germany, Spain, Austria, Portugal and Netherlands.

Secondly, it can be noted that VAT standard rate is, as well, applied in tourism related activities by all top 10 countries, but not in Romania. From top to down, Sweden it is the country with the highest VAT standard rate (25%), followed by Portugal (23%), Italy (22%) and Spain, Netherlands Belgium (all 21%). At the bottom France, Austria, United Kingdom (all 20%) and Germany (19%). Romania has the lowest standard VAT rate (19%), same like Germany, which is the first in the top. Regarding the VAT revenues, it is notable that in Sweden, with the highest standard rate, VAT revenue had the highest percentage of GDP (9.2%). The comparative analysis shows that VAT revenues had a trending in 2019 compared to 2018, in almost all countries, excepting Spain, Belgium and Romania or remained the same

in countries like Sweden or Austria. VAT registration thresholds are relevant for the tourism sector, given that the small business owners are providing many tourism-related services. The growth of the sharing economy suggests that some small businesses linked to tourism may have recently increased (for example, homeowners who rent a spare room or car owners who rent/share their car). Excepting UK, the VAT registration thresholds are quite similar in the analysed states. Sweden has the lowest rate (€8 535) that was introduced only recently.

Table no. 1 VAT rates in the Tourism Sector in selected EU Countries at 1st July 2019

Member state	Standard rate	Hotel accommodation	Transport of passengers	Admission to cultural services	Admission to amusement parks	Restaurant and catering services	Admission to sporting events	VAT Revenue 2018*	VAT Revenue 2019*	Registration Threshold (in EUR equiv.)
Germany	19%	7% 19%	7% 19%	[ex] 7%	19%	19%	7% 19%	7.0	7.1	€12 500
France	20%	10%	10%	2.1% 5.5% 10% 20%	10% 20%	5,5% %; 10%	[ex]; 5,5%	7.1	7.2	€10 000
Spain	21%	10%	10%	[ex] 10% 21%	21%	10%	10%; 21%	6.6	6.5	€10 000
Italy	22%	[ex]; 5%, 10%	10%	10%	22%	10%	10%; 22%	6.2	6.3	€10 000
UK	20%	20%	0%	20%	20%	20%	20%	7.0	7.0	€94 741
Austria	20%	10%	10% 13%	[ex];	13%	10%	13%	7.6	7.6	€11 000
Portugal	23%	6%	6%	[ex]; 13%; 23%	23%	13%	23%	8.7	8.9	€10 000
Netherlands	21%	9%	[ex] 9% 21%	9%	9%	9%	9%	6.8	7.1	€10 000
Sweden	25%	12%	0% 6%	[ex]; 6%; 25%	25%	12%	[ex]; 6%;	9.2	9.2	€8 535
Belgium	21%	6%	0% 6%	[ex] 6%	6%	12% 21%	[ex] 6%	6.9	6.8	€11 200
Romania	19%	5%	19%	5%	5%	5%	5%	6.3	6.2	€7 291

Notes: * in % of GDP

Source: EC -VAT Rates Applied in the Member States of the EU and online sources situation at 1st July 2019.

Comparison between the COVID-19 measures taken by top 3 countries and Romania

In the next part you can find the centralization of the measures taken by the countries with the most visitors in European Union. The sources of these measures are some official documents from European Commission and World Tourism Organization.

FRANCE

Fiscal policies:

- suspended payments of fiscal and social charges
- rents, electricity and gas bills -suspended if the sector activity is interrupted
- postponement of aviation charges for French airlines
- banning the postponement of tax and social security payments for large companies

Monetary policies:

- EUR 1,500 aid for small, self-employed and micro-enterprises in the most affected sectors
- EUR 300 billion in state aid and the mobilization of Bpi France for cash guarantee lines for affected businesses
- Support provided by the State and the Bank of France (credit mediation) in renegotiating or rescheduling loans
- Public loans with favorable interest rates for companies
- permission of the tourism business to issue a loan to customers: credit notes valid for 18 months, instead of repayment.

SPAIN

Fiscal policies:

- support for businesses, especially SMEs and self-employed workers to reduce operating costs
- offering fiscal incentives and the flexibility to pay taxes (personal income tax for self-employers, income corporate tax and VAT) and special support for SMEs and self-employment
- support jobs of permanent workers with discontinuous contracts
- Exemption of 50% of the employer's social security contributions (February - June 2020), for workers with permanent contracts in the tourism sector or related activities
- Exemption from social contributions for maintaining employment through temporary adjustment schemes during COVID -19.
- for SMEs the exemption will be 100%, and for the rest of the companies 75% of the social security contributions

Monetary policies:

- the extension of the credit line provided for the Thomas Cook crisis by 200 million euros, but also its validity to all companies and the self-employed
- benefits granted to self-employed workers affected by the suspension of economic activity
- The social benefit for energy supply ("social bonus") runs until September 15
- compensation for the suspension of public contracts (caused by COVID-19), in order to avoid the termination of contracts that would lead to the insolvency of companies.

ITALY

Fiscal policies:

- Suspension of tax and social security payments for 2 months in the most affected cities
- for tourism sector the postponement of tax and social security payments until 31st of May
- Postponement of tax payments (direct, indirect or social security contributions) until 31 May, without penalties and zero interest rates or the possibility of paying 5 monthly installments thereafter
- in case of emergency situations, the deductibility of donations up to maximum 300000 EUR
- postponement by 2 years of fiscal checks for 2015
- EUR 600 per month tax exemptions for self-employed workers (including VAT)

Monetary policies:

- approval of additional resources for salaries, in order to protect jobs (in the most affected cities)
- Allowance of EUR 500/ month for 3 months for self-employed workers

- 50% single contribution (up to 20,000 euros) for the sanitation of work areas in enterprises
- the extension of the social benefits until 1/6/20
- for persons with annual incomes below EUR 40,000 granting a premium of EUR 100 per month (if they worked in March)
- EUR 200 million from the government to support the airlines Alitalia and Air Italy
- loan guarantees for affected businesses and a moratorium on mortgages and payments.

The modification of the fiscal policies at the level of the states presented by reducing the VAT has as main objective the recovery of the economy affected by the COVID-19 crisis. The role of the measures presented and implemented at the same time by the mentioned countries is quantifiable for a good functioning of the economy.

Table no. 2 Measures taken by Romania during COVID-19

	FISCAL POLICIES	MONETARY POLICIES
ROMANIA	-Accelerate VAT refunds. No budgetary impact for the whole year 2020 - Suspension of the beginning of the forced execution for amounts due to the state budget (exceptions are the amounts resulting from court decisions) -postponement (March 31 - June 30) of the deadline for payment of tax on construction, land and transport equipment (local taxes) -postponement of payment of all taxes during the state of emergency +30 days (3 months) -discount for taxpayers who pay corporate income tax until April 25 (5% for large companies, 10% for others)	- offer of 75% of the salary (not more than 75% of the average salary in the economy) for parents who have to stay at home with children under 12 -The Government has adopted an emergency ordinance to support local businesses affected by coronavirus - the state will pay the technical unemployment for the companies that sent the employees home and suspended their activity either due to the restrictions imposed by the authorities or due to financial problems - the state will pay the minimum wage in the economy to those who cannot claim technical unemployment (self-employed or micro / family enterprises) -The Minister of Regional Development will launch a financing line for the granting of a maximum aid of 1 billion euros for SMEs from European funds

Source: European Commission, 2020

Unlike developed countries, Romania has implemented a number of fiscal policies (taxation, subsidies) and more, the impact on developed countries being much smaller. This is a consequence of the fact that developed countries have allocated substantial sums for them, while Romania has relied on austerity measures to reduce the budget deficit to avoid a situation of collapse.

A series of measures that would contribute to the development of the Romanian economy and implicitly of the economy of the European community through the multiplier effect would be absolutely necessary by allocating the budget of the Ministry of Development and allocating subsidies.

Although we are talking about a consumption-based economy, the intervention of the public sector in development can have positive long-term effects for Romania.

Conclusions

Once an optimal solution is found, no frequent changes should be done, considering the fact that any change in the tax rate will influence the tourists' decisions, which ultimately form the demand.

The emergence of Covid-19 has led to a sudden and rapid decline in tourist flows, with the most affected industry in the world becoming tourism. As an effect of this situation, in the future new behavioral habits of tourists will be defined after the stabilization of the pandemic. Many companies have gone bankrupt, this being the consequence of the multiplier effect of tourism. At the opposite pole are the companies that have chosen to change the business model, resorting to repositioning in the market.

The negative effects of the pandemic could be controlled, but only by correlating the efforts of the state and companies in this time of crisis. Thus, they must establish a series of measures to stabilize economic activity.

Therefore, the measures taken by each state are closely related to the density of tourism activity in that country. Thus, their impact will be visible in the representative statistics on the number of tourists in the next period.

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POSSIBLE USE OF ICT IN AGRICULTURE FOR A SUSTAINABLE DEVELOPMENT

Georgeta-Mădălina Meghișan-Toma¹ and Vasile Cosmin Nicula²

¹⁾*The Bucharest University of Economic Studies, Romanian Academy,
National Institute of Economic Research "Costin C. Kiritescu", Romania*

²⁾*The Bucharest University of Economic Studies, Romania*

E-mail: madalina.meghisan@fabiz.ase.ro; E-mail: vasilecosminnicula@gmail.com

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Abstract

In agriculture, digitization is one of the tools that can bring a major contribution to the processes' optimization, from a sustainable perspective. The main research approach in this paper is to establish the determinants of ICT usage at the level of the European Union's countries (E.U.-28) for the period 2012-2019, for further possible benefits in creating a sustainable agriculture. The current research opens up the perspective for further analysis, based on the following aspects: sustainable agriculture and information communication technology (ICT) during all the logistics chain (food production, food processing, food distribution, food consumption)

Keywords

ICT, agriculture, greenhouse gas emissions, pollutants from agriculture, Internet users, sustainability

JEL Classification

M20, M10, N54

Introduction

Information and communication technology (ICT) is widely used in all fields for its characteristics of enabling resources' efficiency, enhancing productivity and strengthening security. (Svenfelt and Zapico, 2016) In agriculture, digitization is one of the tools that can bring a major contribution to processes optimization, from a sustainable perspective. The main research approach in this paper is to establish the determinants of ICT usage at the level of the European Union's countries (E.U.-28) for the period 2012-2019, for further possible benefits in creating a sustainable agriculture.

The research article has the following structure. In the "Literature review part", the main research results, in the field of ICT influence on pollution decrease, are presented. The "Research methodology" part focuses on the main pollutants in agriculture industry, together with establishing the main ICT usage determinants, based on available data on Eurostat for

the period 2012-2019, at the level of the European Union's member states. The "Results" part underlines the main ICT usage determinants that can be used for further analysis in determining the influence on agriculture pollutants. The "Conclusions" part states the importance of this approach and opens up the research towards the concept of precision agriculture.

Literature review

The 2030 Agenda for Sustainable Development emphasizes the priority for all countries to implement the 17th Sustainable Development Goals (SDGs), among which we mention: "No poverty"; "Zero hunger"; "Responsible consumption and production" (SDG, 2020).

Agriculture industry had a contribution of 1,1% of European Union's GDP in 2018 (Eurostat, 2019). The total surface used for agricultural production at the level of European Union is 173 mil. hectares, representing 39% of the total land area of E.U. (2016)

The Common Agricultural Policy (CAP) was updated with 9 objectives beyond 2020: "to ensure a fair income to farmers"; "to increase competitiveness"; "to rebalance the power in the food chain"; "climate change action"; "environmental care"; "to preserve landscape and biodiversity"; "to support generational renewal"; "vibrant rural areas"; to protect food and health quality" (Eurostat, 2019). In order to achieve these objectives, it is compulsory to create a solid base for innovation and technological development. ICT could play an important part in improving the sustainable development in agriculture.

There were several studies made with regard to the connection between ICT penetration rate and emissions of CO₂. Danish et al. (2019) reached the conclusion that ICT diminishes the emissions of CO₂ only in countries with high and middle income while, for the countries with low income ICT increases the CO₂ emissions. Park et al. (2018) conducted a research in this field and the results underlined that ICT reduces CO₂ emissions. Also, Ozcan & Apergis (2018) reached the conclusion that Internet usage reduces CO₂ emissions. On the other hand, the results of the research of Avom et al. (2020) underline that an increase of ICT penetration rate "both in terms of internet users and mobile phone subscribers" impacts negatively "the environmental quality by increasing carbon emissions".

Research methodology

Analysing the farm area at the level of the countries of the European Union, Romania has 3.422.030 agricultural holdings, representing 32,7% of EU-28 farm area, followed by the other EU countries, such as: Poland (1.410.490 agricultural holdings), Italy (1.145.710 agricultural holdings), Spain (933.060 agricultural holdings) etc. (2016) (Fig. no. 1)

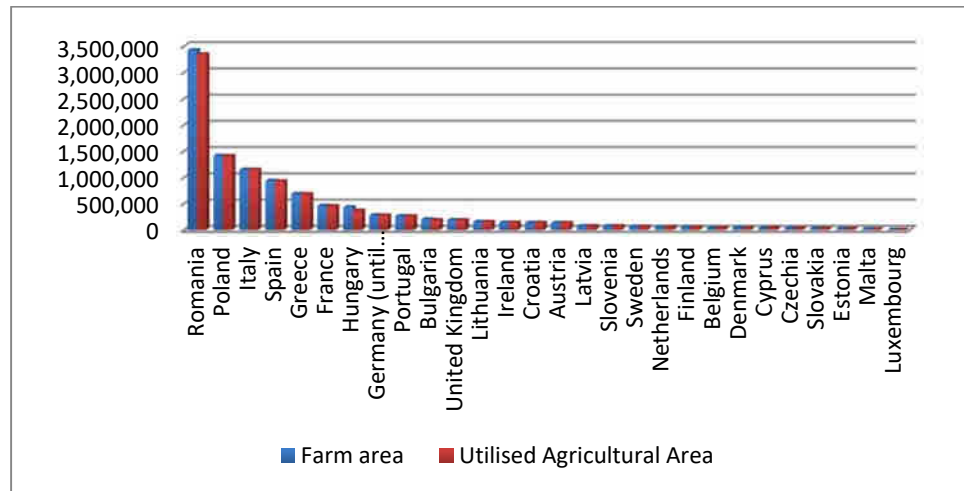


Fig. no. 1 Farm area vs utilised Agricultural Area at the level of the European Union's states (agricultural holdings) (2016)

Source: EUROSTAT, 2020

Agricultural holdings represent an important number at the level of the European Union's member states. Agriculture sector should target towards sustainability, by diminishing the pollutants in air, soil and water.

According to the official data, over 75% of ammonia emissions are produced in agriculture (Eurostat, 2017). The following European Union's states have the highest level of ammonia emissions from agriculture: Germany (647.625 tonnes in 2016 and 639.807 tonnes in 2017), France (569.858 tonnes in 2016 and 6568.243 tonnes in 2017), Spain (453.398 tonnes in 2016 and 469.857 tonnes in 2017), Italy (370.022 tonnes in 2016 and 362.178 tonnes in 2017). (Fig. no 2)

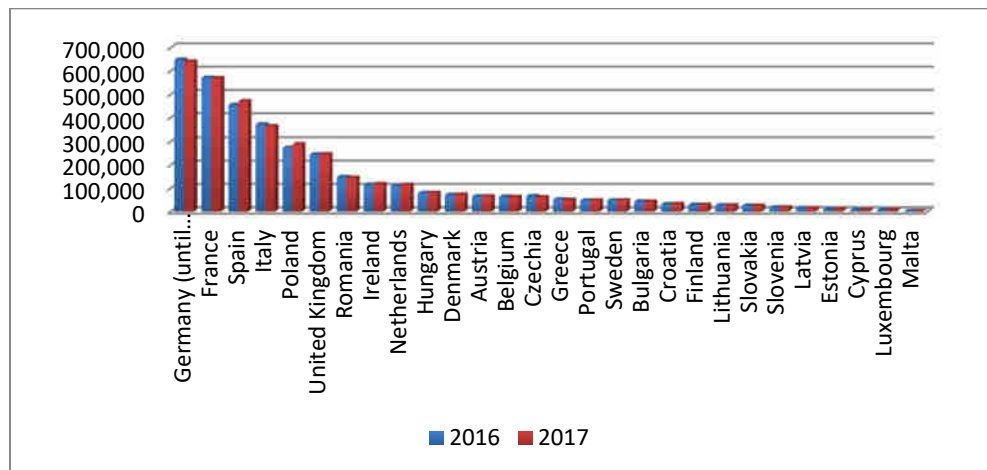


Fig. no. 2 Ammonia pollutant from Agriculture (tonnes) (2016-2017)

Source: EUROSTAT, 2020

Energy emissions generated 80,7% of the emissions of greenhouse gasses, followed by agriculture (8,72%), Industrial processes and product usage (7,82%) and waste management (2,75%) at the level of the year 2017 (Eurostat, 2018). In European Union's countries, France generates the highest amount of greenhouse gasses from agriculture (75.786,9 thousand

tonnes in 2016 and 76.208,53 thousand tonnes in 2017), followed by Germany (66.536,07 thousand tonnes in 2016 and 66.272,9 thousand tonnes in 2017) and United Kingdom (40.890,88 thousand tonnes in 2016 and 41.247,44 thousand tonnes in 2017).

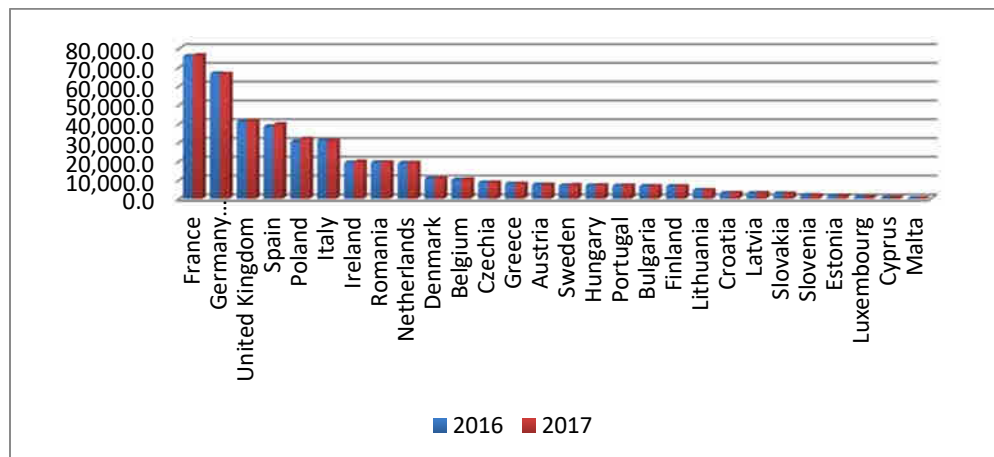


Fig. no. 3 Greenhouse gasses (Co2, N2O in CO2 equivalent, CH4 in CO2 equivalent, HFC in CO2 equivalent, SF6 in CO2, NF3 in CO2 equivalent) from agriculture (thousand tonnes) (2016-2017)

Source: EUROSTAT, 2020

ICT can be used as a transition tool, “due to their disruptive potential” (El Bilali and Allahyari, 2018), using “mobile/cloud computing, Internet of Things, location-based monitoring (remote sensing, geo, information, drones etc), social media and Big Data” (Wolfert, 2015; Poppe, 2016), for a sustainable agri-food system.

In order to assess the level of Internet use from individuals within European Unions’ countries (E.U.-28), a set of variables was chosen, taking into consideration the availability on Eurostat database, for the period 2012-2019 (224 cases). (Table no. 1)

Table no. 1 Variables for level of internet access

Variables	Sources and approaches for measurement
(Item 1) Individuals used a laptop, notebook, netbook or tablet computer to access the internet away from home or work	The variable is integrated in Eurostat set of indicators: Individuals- Places of internet use
(Item 2) Individuals used a portable computer or a handheld device to access the internet away from home or work	The variable is integrated in Eurostat set of indicators: Individuals- Places of internet use
(Item 3) Last internet use: in last 3 months	The variable is integrated in Eurostat set of indicators: Individuals- Internet use
(Item 4) Last internet use: between 3 and 12 months ago	The variable is integrated in Eurostat set of indicators: Individuals- Internet use
(Item 5) Last internet use: in the last 12 months	The variable is integrated in Eurostat set of indicators: Individuals- Internet use

(Item 6) Last internet use: more than a year ago	The variable is integrated in Eurostat set of indicators: Individuals- Internet use
(Item 7) Individuals who have ever used the internet	The variable is integrated in Eurostat set of indicators: Individuals- Internet use
(Item 8) Individuals who used the internet more than a year ago or never used it	The variable is integrated in Eurostat set of indicators: Individuals- Internet use
(Item 9) Internet use: never	The variable is integrated in Eurostat set of indicators: Individuals- Internet use

Source: Authors' own processing data; EUROSTAT, 2020

The Pearson correlation matrix was used in order to assess the level of connection between the variables from the analysis. We can observe that all the items are correlated. Thus, there is a positive correlation between (Item 1) Individuals used a laptop, notebook, netbook or tablet computer to access the internet away from home or work; (Item 2) Individuals used a portable computer or a handheld device to access the internet away from home or work; (Item 3) Last internet use: in last 3 months; (Item 5) Last internet use: in the last 12 months; (Item 7) Individuals who have ever used the internet, whereas there is a negative correlation between the other items. (Table no 2)

Table no. 2 Correlation matrix

		Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9
Item 1	Pearson Correlation	1	0,772**	0,715**	- 0,432**	0,718**	- 0,422**	0,710**	- 0,715**	- 0,706**
Item 2	Pearson Correlation		1	0,780**	- 0,506**	0,778**	- 0,451**	0,769**	- 0,772**	- 0,762**
Item 3	Pearson Correlation			1	- 0,715**	0,997**	- 0,513**	0,992**	- 0,996**	- 0,991**
Item 4	Pearson Correlation				1	- 0,668**	0,551**	- 0,668**	0,668**	0,648**
Item 5	Pearson Correlation					1	- 0,490**	0,997**	- 0,999**	- 0,996**
Item 6	Pearson Correlation						1	- 0,428**	0,487**	0,424**
Item 7	Pearson Correlation							1	- 0,996**	- 0,999**
Item 8	Pearson Correlation								1	0,997**
Item 9	Pearson Correlation									1

** Correlation is significant at the 0.01 level (2-tailed).

Source: Authors' own processing data using SPSS 21.00 software

In order to establish the main items for the level of Internet use from individuals within European Unions' countries (E.U.-28), the factor analysis was employed. With an acceptable value (0,817) of KMO and Bartlett's test, we can keep the results of the factor analysis.

Table no. 3 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,817
Bartlett's Test of Sphericity	Approx. Chi-Square	2568,654
	df	10
	Sig.	0,000

Source: Authors' own processing data using SPSS 21.00 software

One factor allows us to explain 86,262% of the information, using the selected 5 items. (Table no 4)

Table no. 4 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,313	86,262	86,262	4,313	86,262	86,262
2	0,455	9,092	95,355			
3	0,220	4,406	99,760			
4	0,010	0,199	99,959			
5	0,002	0,041	100,000			
Extraction Method: Principal Component Analysis.						

Source: Authors' own processing data using SPSS 21.00 software

The quality of the representation is above 0,8 for all the chosen variables (Table no 3):

- (Item 1) Individuals used a laptop, notebook, netbook or tablet computer to access the internet away from home or work (0,840);
- (Item 2) Individuals used a portable computer or a handheld device to access the internet away from home or work (0,879);
- (Item 3) Last internet use: in last 3 months (0,973);
- (Item 5) Last internet use: in the last 12 months (0,974);
- (Item 7) Individuals who have ever used the internet (0,974).

Table no. 5 Component Matrix

Component Matrix^a	
	Component
	1
(Item 1) Individuals used a laptop, notebook, netbook or tablet computer to access the internet away from home or work	0,840
(Item 2) Individuals used a portable computer or a handheld device to access the internet away from home or work	0,879
(Item 3) Last internet use: in last 3 months	0,973
(Item 5) Last internet use: in the last 12 months	0,974
(Item 7) Individuals who have ever used the internet	0,969
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Source: Authors' own processing data using SPSS 21.00 software

The scale has an acceptable viability of internal coherence (Cronbach's Alpha= 0,931). (Table no 6)

Table no. 6 Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
0,931	5

Source: Authors' own processing data using SPSS 21.00 software

Results

The descriptive statistics of the main variables for Internet usage is listed in the Table no 7, with minimum and maximum evolutions at the level of the European Unions' member states (EU-28), for the period 2012-2019. These variables may be taken into consideration for further analysis regarding the possible correlation between ICT usage and pollutants in agricultural industry. The current research opens up the perspective for further analysis, based on the following aspects: sustainable agriculture and information communication technology (ICT) during all the logistics chain (food production, food processing, food distribution, food consumption) Also, the perspective for further development can be filled with a possible analysis on the "labour market performance" (Marcu et al., 2018), especially through the integration of immigrants, in the context of ICT usage in agriculture.

Table no. 7 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
(Item 1) Individuals used a laptop, notebook, netbook or tablet computer to access the internet away from home or work	224	0,00	58,00	28,9821	11,86356
(Item 2) Individuals used a portable computer or a handheld device to access the internet away from home or work	224	0,00	93,00	56,3125	20,52322
(Item 3) Last internet use: in last 3 months	224	46,00	98,00	79,7277	11,52116
(Item 5) Last internet use: in the last 12 months	224	50,00	98,00	81,0982	10,83298
(Item 7) Individuals who have ever used the internet	224	52,00	98,00	83,1071	10,24311
Valid N (listwise)	224				

Source: Authors' own processing data using SPSS 21.00 software

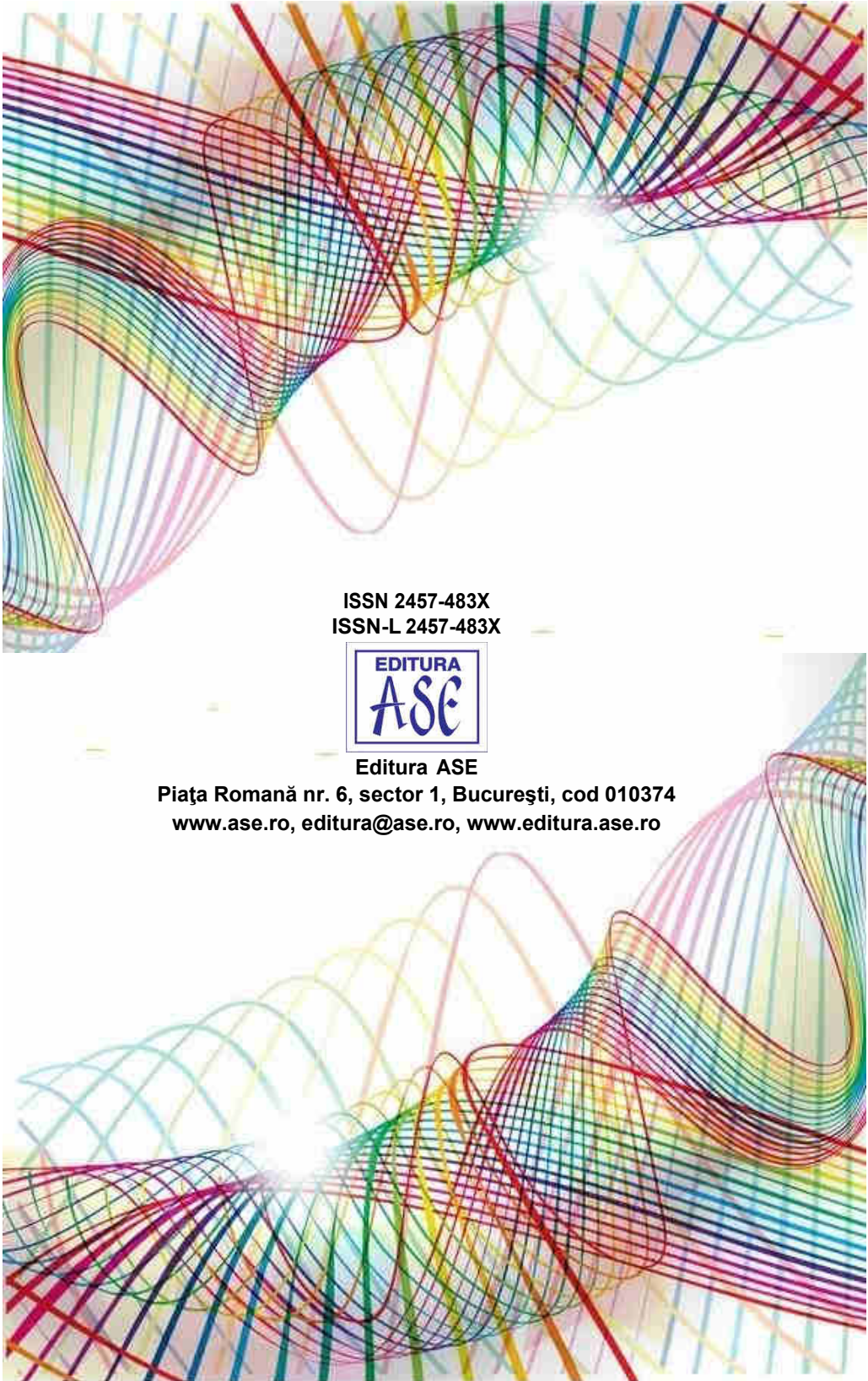
Conclusion

Understanding the determinants of ICT usage can help specialists lead the way towards a deeper analysis of the benefits of precision agriculture. Thus, "investment in tangible fixed assets" (Marcu et al., 2016), together with a change in mentality of the employees towards accepting the usage of ICT in agriculture can represent the first steps towards a sustainable agriculture at the level of the European Union's countries.

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