

Higher Education Institutions as Agents of Sustainable Local Development: The Experience of the University of Almería (Spain)

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Abstract

The pursuit of Sustainable Local Development demands a comprehensive understanding of the multifaceted interactions within a territory. This research delves into the fundamental role that universities play in catalyzing local development, employing methodologies such as PESTEL analysis and systematization of experiences. Through an interdisciplinary perspective, this study examines the contributions of the University of Almería (UAL) to the socioeconomic fabric of its province, shedding light on its educational offerings, research efforts, and cultural commitments.

By synthesizing the perceptions of various academics, the study underscores the critical importance of universities as drivers of sustainable strategies and cultivators of future leaders. Drawing from a rich variety of literature, the analysis navigates through various dimensions, from political and economic landscapes to social and technological realms, to unravel the intricate network of factors that shape the trajectories of local development.

The PESTEL application elucidates the dynamic interaction of political, economic, social, technological, environmental, and legal factors that influence the strategic direction and operational effectiveness of the UAL. Furthermore, the systematization of experiences offers a nuanced understanding of the university's initiatives, revealing its role in fostering collaboration, innovation, and community participation.

Through empirical findings, the study unveils a mosaic of challenges and opportunities embedded in the socioeconomic fabric of the province. In conclusion, this research underscores the transformative potential of universities as agents of change in local development efforts. By leveraging analytical frameworks and empirical information, this study offers valuable insights for policymakers, practitioners, and academics seeking to harness the full potential of universities to drive sustainable local development initiatives.

Keywords

Sustainable Local Development, University Role, PESTEL Analysis, Systematization of Experiences, University of Almería.

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Introduction

The University of Almería was founded in 1993. It has made a very important contribution to the social and economic development of its environment, particularly in the provincial area, through its formative offer, its research activity and knowledge transfer to companies, and its participation in the promotion of culture and sport. In fact, the university is a determining factor in the evolution of different productive sectors such as intensive crops and marble and its auxiliary industries, and tourism. On the other hand, the university facilitates the inclusion of graduates in the labor market through internships in companies, as

well as the support of entrepreneurial initiatives of students thanks to business incubators or the organization of large labor-themed events. Sustainability is one of its key factors as one of the fundamental guides of the organization's action. Céspedes et al. (2013) measure the economic, social and cultural impact of the University of Almería in the province of Almería and point out that it represents 1.07% of Almería's GDP (current prices) corresponding to the year 2010 and 1.74% of the GDP of the service sector corresponding to the same year. In the whole of the Spanish university system, the UAL, with a number of enrolled students that represents about 1% national and 5% Andalusian, is clearly positioned in the group of universities with a profile of medium-small size university.

Due to this introduction, this text will address the fundamental role played by the university as a catalyst for local development, focusing on the exhaustive analysis of external factors through the PESTEL methodology (Political, Economic, Social, Technological, Environmental and Legal), as well as the systematization of relevant experiences. It will examine how these analytical tools provide a comprehensive understanding of the environment in which academic institutions operate, allowing to identify opportunities and challenges that influence their ability to drive the socioeconomic and cultural progress of local communities.

1. Review of the scientific literature

In the realm of Sustainable Local Development, it is essential to adopt a bottom-up approach for decision-making (Gargano, 2021). In this context, the various agents involved in the territory play a crucial role in this development (Caprino et al., 2018). Administrations, acting from a local, regional, and national perspective, must collaborate with other institutions, such as Development Agencies and Universities (Tuurnas et al., 2019). In addition, it is indispensable to consider the actions of companies, financial institutions, associations, among others (Vajdová et al., 2010; Kim et al., 2019). The combination of these diverse proposals must define the policies of Sustainable Local Development (Esparcia et al., 2015). The importance of the university in promoting Sustainable Local Development has been highlighted by numerous authors, as noted in Table 1.

Table no. 1. Contribution to sustainable local development by the university

Author	Contribution to Sustainable Local Development
Nair (1997)	Participation in the drafting and planning of local strategies and contribution in the field of co-development.
Coraggio (2002)	Generation of knowledge from its own experience and research activity.
World Bank (2002)	Development of the physical and technical resources and the human resources required by the production of knowledge and innovations. Local, regional and international cooperation for the knowledge economy.
Feller (2004)	Contribution to state economic growth, interdependence of targeted and general support, and unpredictability of university-based scientific and technological advances that contribute to localized economic growth.
Boisier (2005)	Formative impulse, engine of research and development, and promoter of the structural change of the economy.
Bercovitz and Feldman (2007)	Examination of how the innovation strategy influences the level of involvement of companies with university-based research.
Antonelli (2008)	It is becoming a pillar of the emerging new mode of governance of the generation and dissemination of knowledge.
Geuna and Muscio (2009)	The transfer of knowledge has become a strategic issue: as a source of funding for university research and as a policy tool for economic development.
Vázquez Barquero (2012)	Contributes to the creation and development of networks and clusters of companies, promoting the generation of external economies of scale and the reduction of transaction costs.
Albuquerque (2014)	The university is one of the main actors involved in the local development of territories from the generation of endogenous knowledge.
Rossi and Goglio (2020)	Contributes to local development also through research and business and community participation, and stimulating the local demand for knowledge-intensive services.
Sonetti and Lombardi (2020)	With its broad responsibility in the creation and dissemination of knowledge and its exceptional position within society, they have a crucial role in achieving the Sustainable Development Goals (SDGs) and in understanding the complexity underlying them.

Schaeffer et al. (2020)	Strong managerial and policy implications with regard to the valorization of academic research.
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These studies underscore the vital role that universities play in promoting sustainable strategies and in training future leaders in this field. Therefore, following the introduction about the University of Almería specifically and seeing that they are important catalysts, the need to address their study is justified.

2. Methodology

Initially, a diagnostic analysis will be carried out using the PESTEL methodology, followed by a strategic analysis through systematization of experiences.

The PESTEL analysis provides information on the status and evolution of the characteristics of the external environment by reviewing various aspects, thus allowing to know the situation of the entity under study. The acronym PESTEL refers to Political, Economic, Social, Technological, Ecological, and Legislative factors. Occasionally, the concept is expanded to PESTELI, including the element of the Industry. In addition, the PESTEL analysis promotes a proactive attitude among the members of the organization, identifying possible changes in the evolution of the market that allow the development of strategies without having to wait for these to occur and apply a reactive attitude.

In relation to the PESTEL methodology, we can cite the following works: Leite et al. (2017) who apply it to engineering projects, Aithal (2017) who performs a critical analysis on different methodologies, and Fernandes (2019), on the development of viable and adjustable strategies for planning and management.

The systematization of experiences is a method used to coordinate and facilitate the process of conceptualization, design, execution, analysis, and evaluation of specific and studied projects. To analyze the importance of the role of the actor in development, a series of projects and the Marca Pueblo project are mentioned. We can cite the works of Tapella and Rodriguez (2014) and Echegaray (2019). The systematization of experiences is of great scientific importance for several reasons, among which we highlight the generation of knowledge from practice, or the contribution to theory by providing empirical evidence that can support, refute or nuance current theory, along with the improvement of practice and development of own strategies based on experience, and the importance for training and learning, as it allows individuals to know their own experiences and the experiences of others.

3. Results

Through the use of the PESTEL methodologies and systematization of experiences, the following diagnosis can be carried out:

Table no. 2. PESTEL matrix

Variables	Contents
Political	<p>In 1986, a year before the foundation of the University of Almería, Spain joined the European Union, marking an important milestone with the entry into force of the Maastricht Treaty. During this period, Spain consolidated its democratic regime and established a regional distribution by Autonomous Communities, providing a stable political framework for the development of educational institutions such as the University of Almería.</p> <p>In 2024, the University of Almería experienced a change in its rectorate, which could have influenced its strategic and operational direction.</p> <p>The emergence of the COVID-19 pandemic led the WHO to declare a state of global health emergency.</p> <p>This resulted in the implementation and registration of actions by the Council of the European Union in relation to COVID-19. In 2023, the new Organic Law 2/2023 of the University System was developed, which introduced significant changes in the figures that had been used until then.</p> <p>The regulation of intellectual property has presented obstacles to collaboration between the university and the company, which could affect the transfer of knowledge and innovation.</p> <p>The university has achieved European recognition of its official degrees, which improves its reputation and attractiveness for both national and international students.</p> <p>The university has carried out gradual reforms and revisions of the degrees offered, with extensive diagnostic periods, demonstrating its commitment to the continuous improvement of its educational offer.</p>

Economic	<p>For a time, a boom was observed in key sectors of the province, especially in intensive agriculture, its auxiliary industry, tourism, and natural stone extraction.</p> <p>In 2024, the provincial unemployment rate has dropped to around 14.45%.</p> <p>The economic crisis became a major challenge during this period.</p> <p>The high unemployment rate and the difficulty of maintenance became significant problems.</p> <p>Despite these challenges, new jobs were generated.</p> <p>The prices of tuition and fees remained low or widely fractionable.</p> <p>A growth in the purchasing power of the population was observed.</p> <p>The emergence of new market niches was favored and competitiveness was improved.</p>
Social	<p>The sense of belonging to a place is beginning to weaken, which can affect people's identity and commitment to their community.</p> <p>The population is progressively aging, which can have implications in terms of demand for services and job opportunities.</p> <p>There is a depopulation of rural municipalities, which can affect the local economy and social cohesion.</p> <p>The university community is experiencing economic difficulties to stay in the centers and their surroundings, which can affect enrollment and student retention.</p> <p>There has been an increase in social skepticism and distrust towards public information, which can undermine confidence in institutions and authorities.</p> <p>Technological initiatives are on the rise, which is making presence less important.</p> <p>This can have implications for the way education is delivered and work is done.</p> <p>There is a leakage of native students to other universities, which can affect diversity and talent at the university.</p> <p>There is a lack of interest in continuing to participate in activities related to the university after graduating, which can affect the alumni community and the support network.</p> <p>The community is receptive and open to receiving foreigners, which can enrich diversity and inclusion.</p> <p>Each year a large number of students graduate, which can contribute to the talent and workforce of the region.</p> <p>Society has a positive valuation of its towns and surroundings, which can contribute to a sense of pride and belonging.</p> <p>The acceptance and struggle of women are fundamental, regardless of cultural differences, which can promote equality and social justice.</p>
Technological	<p>There is a deficiency in the communication and transport infrastructures of the province at both the national and international level, which can affect connectivity and accessibility.</p> <p>Massively necessary infrastructures have been applied to develop remote work activities, which has allowed maintaining productivity during difficult times.</p> <p>There is a lack of homogeneous technology throughout the provincial area, which can lead to inequalities in access to and use of technology.</p> <p>Technological tracking of the virus has been carried out and social surveillance has been increased, which has created new moral dilemmas.</p> <p>There has been a replacement and/or updating of various jobs, which may require new skills and training.</p> <p>The professional exercise profile mostly requires the handling of specific computer tools that are not always provided by the institution, which can present challenges for some professionals.</p> <p>Bureaucratic procedures are highly computerized and fast, which improves efficiency and reduces administrative burden.</p> <p>There is a high level of technological updating in certain sectors, which can offer opportunities for innovation and growth.</p> <p>Modalities have been adapted to online platforms, which has allowed maintaining the continuity of activities despite physical restrictions.</p>
Ecological	<p>There is a dense regulatory and strategic framework in environmental matters, which ranges from European legislation to state and Andalusian legislation.</p> <p>There has been a decrease in air and maritime traffic, which can have implications for air quality and environmental noise.</p> <p>In recent years, new green taxes have been created, such as the plastic reduction tax, to incentivize more sustainable practices.</p> <p>New regulations have been introduced in terms of atmosphere and air quality, such as the update of the regulations regarding the evaluation of environmental noise pollution.</p> <p>Water is becoming an increasingly scarce and expensive resource in Mediterranean areas, which suffer from a strong structural water deficit.</p> <p>Climate change is a growing concern that can have implications for the sustainability and resilience of the region.</p> <p>The ideal climate throughout the year and proximity to the sea are favorable environmental factors that can contribute to the quality of life and the attractiveness of the university in the region.</p>

	An increase in the consumption of natural products and their production has been observed, which can have implications for agriculture and the local economy.
Legislative	<p>In 1983, the Organic Law 11/1983 of University Reform was approved, which created the figure of the Social Council of the university as an organ of representation of society in the university.</p> <p>The regulation of intellectual property in Spain, originally materialized in the Spanish Patent Law of 1986, established that the ownership of innovations belonged to the university. This regulation has been repealed by Law 24/2015, of Patents, which details that innovations belong to the entities whose researchers have obtained them in the exercise of their functions. Universities must take into account the provisions of Royal Legislative Decree 1/1996, which approves the revised text of the Intellectual Property Law, and Royal Decree 1720/2007, which approves the Regulation for the development of the Organic Law on the protection of personal data, as well as Organic Law 3/2018, on Personal Data Protection and guarantee of digital rights.</p> <p>When dealing with projects that take into account heritage of historical value, Law 16/1985, of the Spanish Historical Heritage, and Royal Decree 1164/2002, which regulates the conservation of documentary heritage with historical value, must be respected.</p> <p>At the state level, universities, according to Organic Law 6/2001, of Universities, are endowed with legal personality and can develop their functions in a regime of autonomy and coordination. These entities are subjects of application of Law 19/2013, of transparency, access to public information and good governance.</p> <p>At the Andalusian level, the general provisions on universities appear in Legislative Decree 1/2013, which approves the Consolidated Text of the Andalusian Universities Law.</p> <p>At the University of Almería, the regulatory framework of its constitution within the scope of the Junta de Andalucía must be taken into account, establishing it as a public law institution endowed with legal personality and its own patrimony. This includes regulations such as the Agreement of December 13, 2013, which approves the Registration Regulations of the University of Almería, and Decree 225/2018, which approves the Statutes of the University of Almería.</p> <p>The training of teaching staff is carried out continuously through various tools, which ensures that they are updated in their respective areas of knowledge.</p>

3.1 Systematization of Experiences

The University of Almería (UAL) plays a crucial role in sustainable local development, with standout projects in the field of Co-development and the Marca Pueblo strategy to combat rural depopulation. The UAL acts as an entity that mitigates weaknesses and threats while strengthening its strengths and opportunities.

In the field of local development and co-development, universities are fundamental. From the country of origin, they equip emigrants with the necessary training to initiate development projects. From the receiving country, the experience of immigrants offers new perspectives to improve stagnant sectors. Universities act as a bridge to establish a network of knowledge, research, and development that connects both countries. The university plays an essential role in this process, not only as a broadcaster of graduates but also as a facilitator of cooperation for human development.

The relationship between education and training in the university context is vital. Education seeks to transform society for the benefit of human development, equity, and peace. Training seeks to create individuals prepared and adapted to all needs and interests.

The University of Almería (UAL) is currently organizing the I Short Film Festival, an initiative that seeks to combat social exclusion. In addition, it has stood out in the academic field with events such as the Cycle of Humanities Theater and the work “Mestizaje, migration, and uprooting”. The UAL has increased for the third consecutive year the number of scholarships to refugees, demonstrating its commitment to internationalization, not only through the Erasmus+ Program but also through events such as the Fair of Nations, which hosts students from more than 50 nationalities.

In addition, the UAL has launched calls for aid to International Cooperation projects to improve the living conditions of recipient communities. It has managed to transmit information through the congregation of experts from various countries at events such as the XX World Economy Meeting. The university also participates in the pilot project “Young Generation as Change Agents” of the European Union, which seeks to develop legal migration flows between Morocco and Spain.

In addition, it promotes the improvement of staff through cooperation agreements, such as collaboration with the Energy Development Center of the University of Antofagasta, and encourages the completion of International Practices and Entrepreneurship seminars. These initiatives can be extrapolated and show results both in origin and destination. Similar examples can be observed in other universities, such as the

School of Social Enterprises (UAM), which promotes initiatives to avoid or eliminate situations of social exclusion, and the creation of technology-based companies based on the knowledge developed in universities. University incubators in Brazil, which emerged in 1995 and were later imported to Spain, can also be mentioned.

3.2 Marca Pueblo Project

The Marca Pueblo Project is an initiative in Almería, one of the fastest-growing provinces in Spain. With 103 municipalities, the majority of the population is concentrated in just 12 of them, while 51 municipalities have fewer than 1,000 inhabitants. To address this challenge, the Marca Pueblo Project is being carried out in fourteen small rural municipalities.

This project seeks to keep these municipalities within a model of sustainable development, rationally exploiting their endogenous resources. It adopts an interdisciplinary approach, considering economic, legislative, sociological, psychological, anthropological, and environmental factors, always taking into account the cultural and social factor of the area.

The objective is to promote collaborative projects between municipalities, promote their benefits, analyze the performance of economic and social agents, evaluate the impact of ICTs and the capacity of public services. The municipalities present characteristic problems such as scarce productive diversification, the aging of the population, the emigration of the young population, the decrease in birth rates, and difficulties for generational replacement.

The project begins with a State of Needs, carrying out a multifocal analysis on the image of the municipality, its position, its history, the territory it has, and outstanding local attitudes. This phase is complemented by surveys to check the knowledge acquired about the towns, providing a broad vision of each municipality from different starting points.

The University of Almería (UAL) is carrying out various actions to promote rural development and understanding of local municipalities. Through events such as the European Night of Researchers and Science Week, surveys and contests have been conducted to collect opinions and knowledge about rural municipalities. These efforts have provided valuable information that has helped shape the start of the project.

Despite these efforts, the surveys have revealed a great lack of knowledge of the rural world at the university level, as well as a lack of interest due to factors such as the lack of accessibility infrastructure, the scarce capture of private investment, the lack of the labor market, and the non-existence of leisure. However, positive aspects such as environmental quality and the feeling of citizen security have been highlighted.

As a result, the creation of a unique image, or “Marca Pueblo”, is being favored, which goes beyond a simple logo or name. This innovative image, which is based on the most basic knowledge and is expanded at all levels, will serve these municipalities to differentiate themselves and be unique in the national and international panorama. This approach can help these municipalities attract investment, improve their labor market, and increase their attractiveness to residents and visitors.

Conclusions

The bottom-up approach to decision-making is essential for Sustainable Local Development, allowing decisions to be made at the local level and then scaled up to regional and national levels. Various stakeholders, including administrations, development agencies, universities, companies, and financial institutions, play pivotal roles in this process by collaborating to define policies. Universities have a vital role in promoting sustainable strategies and cultivating future leaders in the field. Their contributions to Sustainable Local Development encompass participating in the formulation of local strategies, addressing social demands, generating knowledge, and fostering economic growth.

The University of Almería distinguishes itself in this sphere through projects like Co-development and the Marca Pueblo strategy, aimed at combating rural depopulation. A PESTEL analysis underscores the political, economic, social, and technological influences on the university. The interconnectedness of education and training is paramount, while international cooperation and initiatives such as Marca Pueblo seek to improve living conditions in recipient communities and tackle rural challenges like limited diversification and population aging. Despite concerted efforts, a persistent lack of understanding of rural dynamics persists at the university level due to various factors.

Reflecting on these insights, the importance of integrating bottom-up decision-making approaches, bolstered by the collaborative efforts of diverse stakeholders, including universities, in Sustainable Local Development cannot be overstated. This inclusive approach not only empowers local communities but also

ensures that policies and initiatives align with the unique needs and resources of each region, ultimately fostering more resilient and sustainable socio-economic systems. Looking ahead, the lessons learned from projects like Marca Pueblo offer promising pathways for addressing the complex challenges confronting rural municipalities within the province of Almería. By leveraging local expertise, harnessing technological advancements, and fostering international cooperation, similar initiatives hold potential for catalyzing positive socio-economic transformations within this specific context, thereby contributing to broader endeavors aimed at achieving sustainable development goals.

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