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## A Review of Social Media Use and Cyber-Psychological Behavior of Young People During the Covid-19 Pandemic

Andreea Fortuna Schiopu<sup>1</sup>, Ana Mihaela Pădurean<sup>2</sup>, Ionela-Andreea Istrate<sup>3</sup> and Elena-Mihaela Purecel<sup>4</sup>

<sup>1)2)3)4)</sup> *The Bucharest University of Economic Studies, Bucharest, Romania.*

E-mail: andreea.schiopu@com.ase.ro; E-mail: mihaela.padurean@com.ase.ro;

E-mail: istratelonela19@stud.ase.ro; E-mail: purecelelena19@stud.ase.ro

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### Abstract

The movement restrictions adopted following the Covid-19 pandemic outbreak strongly impacted societies in general, determining modifications in human behaviour. Under these new conditions, information and communication technologies have provided useful and efficient communication instruments. In this context, social networks have offered young people and not only the possibility to maintain and develop inter-personal relationships transferred almost entirely to the virtual environment in the conditions of quarantine. At the same time, social networks have contributed to continuing educational activities, thus significantly increasing the time spent in online settings; this has also generated some unwanted psychological and behavioural effects. This paper aims to research the use of social networks among young people during the COVID-19 pandemic and its impact in cyber-psychological terms by using a survey. The transfer of activities in the online environment has amplified the social isolation among young people, boosting their anxiety levels and, as our results show, accentuating the tendency to replace real life friends with virtual ones. Identifying these changes in young people's behaviour can generate concerns for the development of preventive educational programs. At the same time, optimistic, friendly and extremely confident people can communicate more easily online. The novelty of the research is argued by connecting personality traits and the use of social networks during the pandemic and by interpreting the results from a cyber-psychological perspective.

### Keywords

social media, youth, personality, virtual life

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### Introduction

The accelerated progress in the field of information and communication technologies has generated a series of changes at global level both in terms of the economy, society, culture, environment and psychology, causing changes in human behaviour. The need to research the influence of technology on human behaviour is materialized in a multitude of studies whose results may have significant theoretical and practical implications over society. Beyond the benefits that information and communication technologies offer, it is equally as important to point out the negative impact of the increasing use of social networks at younger ages. Studies have shown that the youth's use of social media brings forth a variety of positive aspects, especially after the outbreak of the Covid-19 pandemic (Wong, et al., 2020; Aduba and Mayowa-Adebara, 2021; Chu, et al., 2020; Bashingwa, 2020; Eghtesadi and Florea, 2020). However, there are countless opinions stating that, under certain circumstances, the

use of social media affects the relationships with friends and family and might contribute to the occurrence of unwanted psychological effects, which could be deepened in the context of this pandemic. (Lee, 2009; Kraut, et al., 1998; Przepiorka, et al., 2019; Christakis, et al., 2011; Gómez-Galán, et al., 2020). Starting in early 2020, the COVID-19 pandemic has considerably increased the role of online platforms in the private and professional lives of young people, making it necessary to study their impact on human habits along with the increasing differences in behaviour between real life and the virtual environment. Also, on this basis, it is necessary to study the characteristics of the so-called „cyber-self” in the context of technology-mediated inter-human relations as well as concerns in the field of cyber-psychology, which is an increasingly current field. For that matter, a series of research studies have shown the connection between the use of the internet and personality traits. (Aiken, 2017; Arab and Diaz, 2015; Jin, 2012; Firth, et al., 2019). Knowing the associations between multiple personality elements and the use of social networks provides useful information in planning individual-family or public-educational interventions.

### **Literature review and hypotheses development**

#### *Young people and social networks*

Present on multiple plans of society, the internet is generally associated with education, travelling, knowledge, trade, socialization, labour mobility and offers a variety of opportunities for fun and relaxation (Firth, et al., 2019). Socially, the use of information and communication technology is linked to a series of advantages related to knowledge and communication (Scott, 2004; Rodriguez-Donaire and Barodzich, 2012). Other studies demonstrate the positive impact of online communication in terms of volunteering, online communication complementing offline communication without diminishing or increasing it (Wellman, et al., 2001) and contributing to raising self-esteem and the quality of friendship (Valkenburg and Peter, 2011).

However, the use of social networks can also generate unwanted effects such as affecting relationships with friends or family due to the time spent online that determines the replacement of offline connections with the more superficial online ones (Lee, 2009). At the same time, the use of the internet and social networks in the online environment could represent the source of loneliness and depression (Kraut, et al., 1998; Przepiorka, et al., 2019); some applications may contribute to creating an addiction, and research demonstrates a significant link between problematic internet usage and moderate to severe depression (Christakis, et al., 2011). All these aspects have been deepened by the COVID-19 pandemic (Gómez-Galán, et al., 2020).

Regarding the link between age and the frequent use of social networks, it is more pronounced among young people, the younger generations evolving in a digitally connected world (Firth et al., 2019). Although many studies have shown young people’s interest in social networks regarding education, excessive use is related to leisure activities (Gómez-Galán, et al., 2020). The coming of the COVID-19 pandemic shifted young people’s interest in educational use to a greater extent due to lack of mobility and the moving from on-campus to online education, making online platforms decisive in continuing youth education and making isolation easier to bear (Gómez-Galán, et al., 2020). Thus, the time spent by young people on online platforms has considerably increased:

#### **H1.** Young people put in more time on social media as a result of the COVID-19 pandemic

The benefits of using social networks in education refer to their ability to build communities and stimulate collaboration and access to education (Bower, 2017). While the use of social media in education before the pandemic was controversial, with the declaration of this pandemic, along with messaging and conferencing platforms such as Zoom, Skype, WhatsApp, these played a significant role in distributing information and sharing ideas in teleworking conditions, organizing events for the dissemination of information and innovation with a large audience, in sharing international knowledge beyond geographical and linguistic barriers (Wong, et al., 2020). Through social networks and their associated services such as Facebook, Twitter, Instagram, WhatsApp, etc., free access to various resources was offered, and interactive communication was achieved between students and teachers, these becoming more accessible in the case of distance education, e-learning opportunities being a dominant factor in today’s digital world (Aduba and Mayowa-Adebara, 2021).

During the COVID-19 pandemic, the importance of social networks has become even greater, knowing their role in distributing information to patients and scientists if they are used correctly. Of all the available social networks, Facebook has played an important role in communicating health care issues during the pandemic as an effective platform for preventing the spread of the virus and as a way to recruit health professionals (Chu, et al., 2020; Bashingwa, 2020; Eghtesadi and Florea, 2020). Though, studies have shown that misinformation about this pandemic occurs frequently among social networks socialization (Cuello-Garcia, et al., 2020). Therefore, we hypothesize:

**H2.** Social networks have a role in creating panic by spreading fake news among young people

*The online environment and the need for cyber-psychology*

Studies have shown that the use of online platforms affects the structure of the human brain, its function, and cognitive development by influencing attention, memory, knowledge and social knowledge along with the psychological consequences of interactions and status in the virtual environment (Firth, et al., 2019). Cyber-psychology or online psychology represents the “study of the impact of new technologies on human behaviour” (Aiken, 2016); research conducted so far in this field shows the availability of human behaviour to register mutations due to the phenomenon of online disinhibition, which causes people to do things they would refrain from doing in the real world (Aiken, 2016).

In the digital age, there is a concern for the creation of a new identity, one that wants to be revealed and which specialists call the "cybernetic self", an idealized self that represents rather what people want to be and not what they are in reality and which, in the case of young people, is manifested by the way they interact with others (Aiken, 2017). Thus, the number of friends, social contacts with which a person can interact is about 150 called Dunbar, and anything beyond is more complicated to manage (Carron, et al., 2016). Given that a young person has a Facebook account, Instagram and participates in WhatsApp and Twitter, it is clear that we cannot talk about friends in real life, which makes young people less socially competent (Aiken, 2017).

Privacy paradox is a topic initiated by Professor Susan B. Barnes according to which in the online environment, young people are not necessarily concerned about privacy but are outraged when parents, teachers, or other acquaintances enter the privacy of their actions (Barnes, 2006).

An individual's personality is formed based on a series of factors - social environment, family, experiences, etc. and the presence among social networks can encourage the expression of feelings, feelings usually hidden in real life (Ahuja and Alavi, 2017). Research has shown that the use of the Internet in social relationships has brought more benefits among extroverts by increasing self-esteem and decreasing feelings of loneliness and poorer results among introverts (Kraut, et al., 2002); in other words, social skills act as moderators based on the interaction effect of Internet use with extroversion (Lee, 2009).

Examining the relationship between personality and internet use, studies have shown that extraversion, openness and neuroticism positively relate to internet communication and extroversion, openness, conscientiousness positively to internet leisure use (Mark and Ganzach, 2014). Also in this sense, it has been demonstrated that there is a connection between internet use and two narrow traits - optimism and work drive, more pessimistic young people being attracted to the online environment in order to confirm their negative expectations or to share their ideas with other young people with the same concepts as them and, consequently, spend more time online (Landers and Lounsbury, 2006). During the COVID-19 pandemic, proactive personality has been shown to enhance the quality of online interaction and self-efficacy on the Internet (Zheng, et al., 2020). Thus, we hypothesize:

**H3.** Some personality traits influence young people's easiness to communicate online

For a broader picture of the impact of using social platforms, it is necessary to identify the typology of both online activities and online platforms (social networks) used (Lee, 2009) and their distinctive evaluation (Valkenburg and Peter, 2011). For example, the impact of using online platforms on the quality of youth friendship can be seen as positive in the absence of anonymity and when the Internet is used to strengthen existing friendships (Desjarlais and Willoughby, 2010). But an important element to analyse in the presence of young people on social networks is the experience of anonymity that can

generate both positive aspects (for example, can reduce concern about physical aspect problems) but can stimulate aggressive, offensive behaviour and cyber harassment (Valkenburg and Peter, 2011). Online anonymity is another “super-power” that gives users a sense of security (Aiken, 2017). Increasingly, the online presence manages to replace important aspects of real life. For example, Japanese video games such as LovePlus offer "dating simulators" through which people learn how to approach a relationship and how to love, and players said that love for virtual girlfriends programmed to be faithful comforts, supports and protects them (Aiken, 2016).

The diversity of online media can lead to the creation of different identities that change rapidly and can lead to constructive or destructive interpersonal and intrapersonal experiences, depending on variables such as time of use, type of virtual social group chosen for membership, etc. (Arab and Diaz, 2015; Jin, 2012). Under these conditions, the construction of youth identity focuses on a new paradigm of communication in which the boundary between public and private becomes increasingly unclear (Arab and Diaz, 2015); in the brain, some unique aspects of using online social networks are not found to be central to real-life social connections (Firth, et al., 2019). In this context, we might assume that:

**H4.** The length of time spent on social networks influences the attitude toward an online or virtual life

#### **Method**

This study aimed to understand how social networks have influenced young people in terms of social media use and some associated behaviours during the COVID-19 pandemic. The most appropriate method was the survey, materialized in a questionnaire containing questions targeted at specific topics such as time spent on social media before and during the pandemic, social media platforms accessed daily, easiness to communicate online, accessibility of developing friendships in real life or in virtual life or predominant role of social media regarding information sharing during the COVID-19 pandemic. The questionnaire was distributed online through a Google Docs form between March 23 and April 2, 2021. A number of 118 responses were collected. From our sample, 32 are male and 86 female, 50% are from 16 to 20 years old, 43.2% from 21 to 25 years old, and the rest between 26 and 30 years old. 78.8% of the sample is represented by high school graduates and 10.2 college graduates. 72% of our respondents live in urban areas while 28% live in rural villages. 79.7% of the sample is represented by students.

We used IBM SPSS 27 to analyse the data. First, we screened the data and utilized some basic statistical analysis such as descriptive statistics and frequencies. Skewness and kurtosis statistics were examined and we concluded that all values were within acceptable limits of  $\pm 2$  (George and Mallery, 2016). Only one exception of this principle appeared, concluding data can be considered normally distributed. Moreover, in order to compare the observed values based on some criteria, we used cross-tabulation and Pearson’s Chi Square test of independence. Also, we chose the paired sample t-test to tackle differences between respondents’ answers and the Mann-Whitney U test to compare responses of some sub-groups from our sample. For the Mann-Whitney U test, the null hypothesis declares there is no difference between the medians in the included variables and the alternative hypothesis entails there is such a difference. The significant level was 0.05 for all tests and statistical analysis in this study.

#### **Results**

The first hypothesis of our study was that, under the new conditions imposed by the COVID-19 pandemic, young people spend more time on social media platforms. First, we looked at frequencies of the responses given to the first two questions of the questionnaire (Table 1). Youth put in much more time on social platforms after the start of the pandemic, with a whopping 34% of them allocating more than 6 hours rising from 11% before the pandemic.

**Table no. 1. Time spent on social media before and during the COVID-19 pandemic (% , N=118).**

Answers	Frequencies	
	Before COVID-19	During COVID-19
Less than 1 hour	14.4	5.1
Between 1 and 3 hours	49.2	27.1
Between 3 and 6 hours	25.4	33.9
More than 6 hours	11.0	33.9

Second, the paired t-test was applied to analyse if there was a significant difference between these answers. As shown in Table 2, the COVID-19 pandemic had a significant effect on the time spent on social media by young people. Therefore, since the p-value is less than our significance level of 0.05, we reject the null hypothesis and accept H1. The proportion of time spent on social networks significantly changed from before to during the COVID-19 pandemic ( $t(117) = 9.101$ ,  $p < 0.05$  with 117 degrees of freedom and a p-value of  $0.000 < 0.05$ ).

**Table no. 2. Paired sample T-test statistics for time spent on social media before and during the COVID-19 pandemic (N=118)**

Pair	Variables	Mean	95% CI		t	df	Sig. (2-tailed)
			Lower	Upper			
1	Time spent on social media during pandemic- Time spent on social media before the pandemic	.636	.497	.774	9.101	117	.000

Asked about the extent to which they access a series of social platforms on a daily basis, the young people mentioned they use Facebook (with a mean of 3.00 out of a maximum of 5), Instagram (mean of 3.76), Tik Tok (mean of 2.83), WhatsApp (mean of 4.25), Twitter (mean of 1.29), and YouTube (mean of 3.78). We can see that youth is drawn mainly towards Instagram, YouTube and WhatsApp, with their visual content. For learning purposes, the respondents' choices of online platforms are WhatsApp, Zoom, Google Meet and Google Classroom. Regarding the predominant role of social media during the COVID-19 pandemic, 56.8% of respondents said the social networks mainly inform, and 33.9% they mainly misinform people, while 9.3 say they do not know. Another question was about the role of social networks in spreading false information and creating panic among the population. 0.8% of respondents say social networks never spread fake-news and create panic, 5.1% rarely, 28% sometimes, 34.7% often, and 31.4% always. This massive proportion of respondents believing social media has a role in creating panic by spreading fake-news help us conclude H2 is supported.

Another aim of this study was to assess the easiness of young people to communicate online, coupled with some personality traits. One of our hypotheses implies that the personality type affects the way young people communicate online; to be more exact, some personality traits facilitate the online communication. First, we looked at the overall easiness to communicate online (Table 3); then we used cross-tabulation and Pearson's Chi Square test (Table 4) to see if some personality features influence the easiness to communicate online.

**Table no. 3. Easiness to communicate online (% , N=118).**

Answers	Frequency
1 Impossible	0.0
2 Difficult	4.2
3 Not difficult, but not easy	20.3
4 Easy	30.5
5 Extremely easy	44.9

Table 3 shows that most respondents consider easy or extremely easy to communicate online (approximately 75% altogether), but 25% see this form of communication as difficult or at least not easy. Overall, these results of young people communicating easily online were also shown in the mean of responses (4.16 out of maximum 5). This might be explained by the time spent online by youth and,

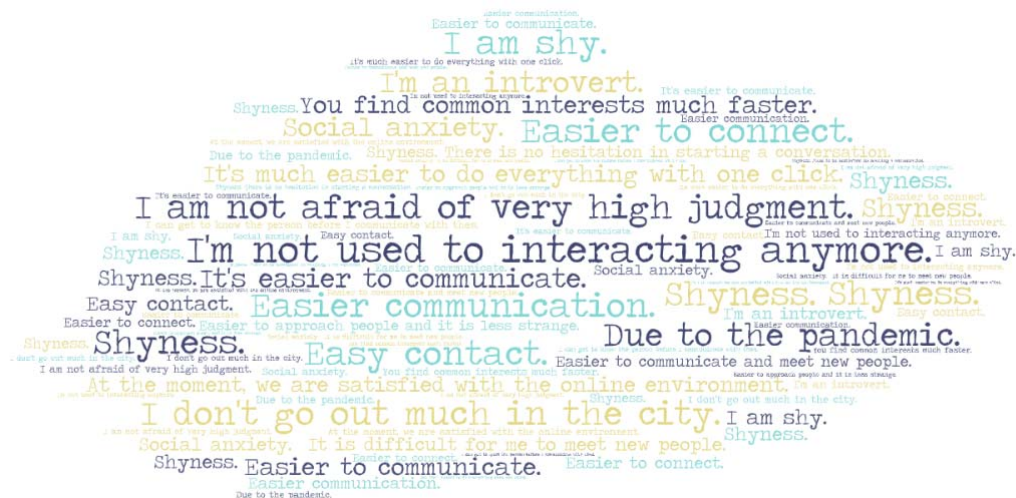
as we presume, by some personality features. Therefore, we measured the optimistic attitude, the self-esteem, their own perceived charisma, the extent to which people live an active life and the friendliness on a 5 level scale and cross-tabulated the easiness to communicate online against all these personality features.

**Table no. 4. Chi-Square for Personality Traits and Easiness to communicate online (N=118).**

Variables	Pearson Chi-Square	Asymptotic Significance
Optimistic attitude * Easiness to communicate online	34.961	0.000
Self-esteem * Easiness to communicate online	21.704	0.041
Charisma * Easiness to communicate online	39.328	0.000
Active life * Easiness to communicate online	11.719	0.468
Friendliness * Easiness to communicate online	28.338	0.005

The results in Table 4 show that optimism ( $\chi^2$  of 34.961,  $p < 0.05$ ), self-esteem ( $\chi^2$  of 21.704,  $p < 0.05$ ), charisma ( $\chi^2$  of 39.328,  $p < 0.05$ ), and friendliness ( $\chi^2$  of 28.338,  $p < 0.05$ ) significantly affect easiness to communicate online, supporting H3. It is therefore easier for optimistic, charismatic, friendly people and those with high self-esteem to exchange messages in the online environment. The only trait that did not have a significant effect on the way young people communicate online is the degree to which they live an active life ( $\chi^2$  of 11.719,  $p = 0.468 > 0.05$ ).

Last but not least, we studied the accessibility of developing friendships in real or in virtual life. 80.5% of our respondents appreciate it is easier to form friendships in real life and 19.5% in virtual life. Interestingly, the Spearman’s rho correlation coefficient between easiness of developing friends in real or virtual life and time spent on social media is 0.233 with a p-value of 0.011, entailing a weak correlation between the two variables. We went further with the Mann-Whitney U test to compare the responses of people that think it is easier to form friends in real life with the ones that think it is easier in virtual life based on the number of hours spent on social media. From these results, we can conclude that the number of hours spent on social media was significantly higher in the “easier to develop friendships in virtual life” group than in the “easier to develop friendships in real life” group (Mann-Whitney U of 739.500,  $p = 0.012 < 0.05$ ). This finding implies that the length of time spent on social networks influences the attitude toward an online or virtual life, supporting H4. To better understand this choice, we followed with an open question asking to motivate the given response. Some of the most representative answers are presented in Figure 1.



**Figure no. 1. Motivations for developing friends in virtual life**

The option of virtual life as an environment to develop friendships to the detriment of real interaction is mainly explained by shyness, easy communication or limited options to connect in real life.

Worrisome are some mentions of social anxiety or difficulty of meeting new people in real life. This tendency toward the virtual might create problems in the future, especially for young people, since they might become accustomed to interact in the simulated environment and refrain from involving themselves in real surroundings.

### Conclusions

The COVID-19 pandemic required quick and practical solutions to continue peoples' lives which entailed using technology and online communication. Moreover, social distancing and the imposed restrictions and lockdowns have amplified the fundamental need people have to connect and socialize with others. The isolation and the loneliness felt during the restrictions have pushed people into spending more time on social platforms to socialize, work or participate in online classes. Given the fact that social distancing does not allow people to see each other and be physically close to friends, social networks were the only bridge to them. This has further deepened the gap between real and virtual; the online environment is used not only for entertainment or relaxation purposes, but also for education and socialization. Our findings show that the time spent on social media increased as a result of the COVID-19 pandemic; the time spent on social networks is correlated with people thinking it is easier to develop friends in virtual life. Social networks contributed to creating panic by spreading fake news among young people during the pandemic. Another finding is that most young people think it is easy to communicate online. We also concluded that some personality traits such as optimism, self-esteem or friendly attitude influence young people's easiness to communicate online. One limitation of this study is represented by the number of respondents; therefore, future studies should include bigger samples. Another limitation is materialized in the use of one research method, and more diverse methods should be used for data triangulation.

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