

**OLDER PEOPLE AND CONNECTIVITY: HOW HAS THE PANDEMIC CHANGED THE OLDER
POPULATION'S USE OF ICTS AND SOCIAL NETWORKS?**

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Abstract

The arrival of the COVID-19 pandemic has triggered numerous changes in our lives. The increase in and need for the use of digital tools is one of the most notable, to the extent that these resources have made it possible to continue with the development of tasks or activities of multiple kinds. This fact has not bypassed the elderly, who often find themselves in a situation of inequality caused by the generational digital divide. Using a mixed methodology, combining quantitative and qualitative techniques, this study aims to understand and analyze how this situation has influenced the use of ICTs and social networks by the elderly. The research participants are 415 students to University of Experience of a Spanish University aged 55-84 years old. The results and information obtained show changes in the way in which the participants relate to technology since the beginning of the pandemic in terms of time and purposes. It is also clear that there is a need to take measures to combat the generational digital divide, a problem that is of particular concern to this population group as they recognize it as their own.

Keywords: Elderly people, connectivity, ICT, social networks, COVID-19

1. INTRODUCTION

The digital era in which society is currently immersed has brought about a social change in which technological development has been accelerated by the irreversible globalization of Information and Communication Technologies (hereinafter, ICT). These tools have become an essential element in the dynamization of daily life for the enjoyment of the same. However, there are still many sectors of society that, for various reasons, do not have access to ICTs and are excluded from the benefits that these tools bring. We refer in this sense to the so-called digital divide, understood as the distance that exists between people or social groups that have access to the Internet and technology and those who do not enjoy such access. (Evans, et al. 2015; Wallcook, 2019, Macedo, 2017; Choudrie et al., 2018; Ragnedda, 2019; Warf, 2019; Shakina et al., 2021; Jamil, 2021; Aydin, 2021; Liu et al., 2022).

The digital divide has its origin in multiple and diverse causes. This inequality is the extension of other pre-existing social gaps such as economic factors, education, geographic location or gender, among others (Choudrie et al., 2020; Martín Romero, 2020; Aydin, 2021; Jamil, 2021). Currently, age is one of the most worrying factors in relation to inequalities in access to ICTs. The generational digital divide is becoming increasingly pronounced, at the same time as a demographic and social transformation determined by the aging of the population is taking place (Zambianchi et al., 2019; Casanova et al., 2020; Guzman-Parra et al., 2020; Canedo-García et al., 2022). According to data from the National Statistics Institute (NSI), in 2021 people over 65 years of age in Spain accounted for 19.77% of the total population, a percentage that has increased markedly in recent years. The main limitation in the use of ICTs for the elderly is the lack of digital knowledge and skills (Mubarak & Nycyk, 2017; Hargittai et al., 2019; Jun, 2020; Tirado-Morueta et al., 2021). Added to this, this population group has lived for many years on the margins of technologies and the internet, so that older people may perceive these tools as a non-essential part of their lives (Choudrie et al., 2018).

The use made of technologies directly influences people's living conditions, since ICTs are expanding on multiple levels and dimensions such as commerce, training, communication or administration, spaces that make the network an essential social good (Singh, 2017; Schlomann et al., 2020; Martín Romero, 2020). Thus, people affected by the generational digital divide find themselves in a situation of disadvantage and social

exclusion as their rights and opportunities are affected and limited. The aging of the population is a growing reality, so that integrating older people into new forms of communication would mean that they would not feel isolated from society and would continue to be active agents in it (Evans et al., 2015; Macedo, 2017; Wallcook, 2019; Canedo-García et al., 2022).

Achieving widespread access to technological media and digital literacy would entail the creation of opportunities to participate fully and responsibly in society. This would promote the inclusion of the elderly in all areas of daily life. However, facilitating such literacy requires an impact on the use of technologies and attention to how people can take advantage of such access for the purpose of improving their personal and social status, as well as building a fairer and more equitable society (Lázaro et al., 2015; Abdullah et al., 2017; Canedo-García et al., 2022).

Reducing or eliminating the generational digital divide would bring benefits at both the social and individual levels. In addition to the social progress that the technological inclusion of this population group entails, it should be noted that many authors in recent years have echoed through their research the numerous benefits that the use of ICTs brings to the elderly on a personal level. As they begin to learn and use ICTs, they become aware of how useful they are in their daily lives, so that they can solve everyday activities and optimize their living habits. These include educational and informational opportunities, access to leisure and entertainment, administrative procedures and the possibility of accessing health services and health information (Halmdienst, 2019; Zambianchi, 2019; Schlomann et al., 2020; Choudrie et al., 2020; Canedo-García et al., 2022).

Different research (Zambianchi & Carelli, 2018; Morton et al., 2018; Zambianchi et al., 2019; Casanova et al., 2020) indicates that, using ICTs, older people develop greater autonomy and independence, as well as feelings of self-efficacy and satisfaction. All of this leads to a notable increase in their psychological and social well-being and greater training of cognitive abilities. This, in turn, contributes to an increase in their self-esteem.

The role technology plays in the lives of older people is primarily as a means of communication. Bruggencate et al. (2019) conducted a study with people aged 70 years and older in which the role of social technology in the lives of older people was analyzed.

Respondents stated that they used applications such as WhatsApp or Skype to connect with others. The subjects perceived these tools as a very valuable means to enrich and strengthen their relationships. However, the findings of this research also shed light on the problem derived from the lack of digital competence. Many of the participants mentioned how complicated and frustrating they found it at times to use their phones or other technological devices.

Continuing in line of communication, Schlomann et al. (2019) conducted research with people over 80 years of age in which they found that people who make frequent use of ICTs and social networks experience a feeling of loneliness and isolation less than those who do not make use of these tools. Participants who did use ICTs reported finding in these tools a new way of establishing social relationships. Similarly, in the study by Sims et al. (2017) with participants aged 80 years and older, it was highlighted that the motivation for ICT use was determined by the usefulness of ICTs to connect with loved ones, which is significantly related to less loneliness and greater well-being. Castellacci and Tveito (2018) obtained the same results and, in addition, noted that older people's social interactions are also changing due to the increasing use of smartphones and the Internet and greater opportunities for remote communication.

Lifelong learning for older people has the purpose of enabling people to develop personally and adapt socially, so that they continue to have a position in society (Gasparyan et al., 2019). In addition, many of the older people who access these studies were not able to be trained when they were young, so these programs allow them to achieve such a goal and increase their self-esteem and self-confidence (Lai et al., 2021). Returning to the research of Castellacci and Tveito (2018), these authors point out that ICT can positively influence the improvement of the quality of educational services for the elderly. Through these tools, they can access multiple information and, as Sims et al. (2017) expose, being able to access new knowledge and information is one of the factors that most motivate older people to make use of technology.

Other research points to age and gender as influencing factors in the use of ICTs. This is the case of the studies by Vorrink et al. (2017), Keränen et al. (2017) and Halmdienst et al. (2019), whose results evidence that older age indicates worse attitude and use of technology. Regarding gender, Halmdienst et al. (2019) point out that men

value entertainment and communication tools more positively, while women show more positive attitudes towards technologies linked to health or support.

Recently, the pandemic resulting from COVID-19 has highlighted the usefulness of technological tools in terms of interpersonal relationships. The use of ICT and social networks has been triggered to meet the needs of communication and socialization between people in a situation that has limited the possibility of face-to-face relationships (Yang et al., 2020; Garfin, 2020; Lee et al., 2021). This phenomenon has also been reflected in the elderly who, through ICTs, have discovered a new model of communication. Using these technological tools, this population group has been able to enrich and increase their social relationships, as well as reduce the feeling of isolation or loneliness. In this way, the social distancing forced by the situation derived from the COVID-19 pandemic has allowed the elderly to discover a new context of opportunities to face complicated moments and take advantage of the benefits that online connectivity offers in multiple areas of their lives (Bakshi & Bhattacharyya, 2021; Kulmala et al., 2021; Llorente-Barroso et al., 2021). In line with the above background, this study is proposed with the aim of understanding and analyzing the consequences of the advent of COVID-19 on the use of technology in the elderly.

2. METHOD

2.1. Participants

Students from the University of Experience of a Spanish university participated in this research. The University of Experience is a university program within the context of Higher Education. It is aimed at people over 55 years of age who seek lifelong learning. The program is taught by university professors and deals with the study of different humanistic, historical, scientific and artistic fields from a current perspective.

The total sample of the study consisted of 415 students from the University of Experience at a Spanish university. Of the total number of participants, 43.61% were men and the remaining 56.39% were women. The age of the subjects ranged from 55 to 84 years ($M = 66.27$; $SD = 6.36$) and the largest age range was 61 to 70 years (66.5%) (Table 1). Regarding the qualitative phase of the study, a total of 15 older persons responded to

the open-ended questions posed at the end of the questionnaire. Table 2 shows the characteristics of these subjects, specifically their gender and age.

Table 1. Sociodemographic characteristics in the sample (N=415)

Variables	N	% of the sample
Gender		
<i>Men</i>	181	43.61
<i>Women</i>	234	56.39
Age (M= 66,27 años; SD = 6,36)		
<i>55 to 60 years old</i>	54	13.02
<i>61 to 65 years old</i>	136	32.77
<i>66 to 70 years old</i>	140	33.73
<i>71 years old and older</i>	85	20.48
Total	415	100

Table 2. Sociodemographic characteristics of the interviewed participants (N=15)

Participant	Gender	Age
1	W	64
2	W	77
3	M	65
4	W	78
5	M	70
6	M	75
7	M	60
8	W	61
9	M	56
10	W	64
11	W	80
12	M	82
13	W	73
14	M	57
15	M	66

2.2. Instrument

The instrument used to collect information from participants was an *ad hoc* questionnaire, which was designed based on the exhaustive review of recent research whose subject matter is similar to that of the present study (Sims et al., 2017; Castellacci & Tveito, 2018; Zambianchi & Carelli, 2018; Morton et al., 2018; Bruggencate et al.,

2019; Schlomann et al., 2019; Zambianchi et al., 2019; Casanova et al., 2020; Yang et al., 2020; Garfin, 2020; Lee et al., 2021; Bakshi & Bhattacharyya, 2021; Kulmala et al., 2021; Llorente-Barroso et al., 2021). Likewise, to determine the content validity of the instrument, it was subjected to an expert judgment in which four judges participated, all of them professionals from university academia from different disciplines: education, educational research methods, and behavioral sciences. Each one of them established the adjustment that, in their opinion, each indicator presented. After this, the pertinent modifications were made to finalize the design of the data collection tool.

Once this process was completed, the questionnaire was structured in two distinct sections: the first part corresponded to the collection of information related to the sociodemographic characteristics of the participants (age, gender and grade) and the second part included questions related to the use of ICT and social networks, as well as the consequences of the COVID-19 pandemic on this use. In turn, this second part was structured in four sections. In the first, participants were asked about the purposes for which they use ICTs and social networks and, in the second, they were asked about the consequences that the COVID-19 pandemic had had on their use of technology. This part of the questionnaire consisted of a total of 12 polytomous items to be scored using a Likert-type scale with a 10-point interval, where 0 meant "strongly disagree" and 10 meant "strongly agree". Finally, four open-ended questions were offered, through which participants were asked about the opportunities and barriers they had encountered in the educational (2 questions) and social (2 questions) spheres since the outbreak of the pandemic.

2.3. Procedure and data analysis

The first step in the development of the study was to carry out a review of the most recent literature in order to ascertain the current situation in relation to the research topic. The research project was then designed and evaluated and approved by the Research Ethics Committee of the Community of Aragon (CEICA) (approval code: Act No. 06/2022). Subsequently, the instrument was designed based on the literature previously consulted and, after that, it was completed considering the suggestions offered by the experts who analyzed it. For data collection, the questionnaire was disseminated among the study sample by e-mail and in a paper version for those who had more difficulty accessing it online. At all times the people who participated in the study were

informed that the information collected would be treated confidentially, so that their anonymity would be maintained.

Once all the data had been collected, they were coded and analyzed using the SPSS v. 26 statistical program. For their treatment and to draw conclusions with respect to the research objectives, descriptive statistical analyses of the different items that make up the questionnaire were carried out and the degree of association between the variables was studied using Pearson's Correlation Coefficient. To analyze the reliability of the questionnaire used, Cronbach's Alpha was calculated, which obtained a value of 0.93.

Next, we proceeded to analyze the responses to the open-ended questions, which were answered by a total of 15 participants. First, as indicated by Miles and Huberman (1994) and Rodriguez et al. (2005), the information was categorized to reduce the data by coding and synthesizing them based on the categories of analysis (opportunities in the educational setting, barriers in the educational setting, opportunities in the social setting and barriers in the social setting). Likewise, the saturation principle of Strauss and Corbin (1990) was applied, through which the information is analyzed until it is considered that the new information does not add significance to the study, and relationships between the responses obtained were specified.

In order to provide greater methodological rigor, four strategies applicable to qualitative research were adopted (Yilmaz, 2013; Noble & Smith, 2015): 1) credibility criterion (the interviews were transcribed and triangulation was performed); 2) transfer criterion (the process carried out and the context of the study were detailed); 3) consistency criterion (the theoretical perspective, instruments, sample characteristics, data collection procedure, as well as the researcher process were specified); 4) neutrality criterion (the data collected were described, the characteristics and process of sample selection and the steps and decisions were presented).

5. RESULTS

Firstly, to find out how the elderly use ICTs and social networks, the participants were asked for what purposes or objectives they use these resources. Figure 1 shows the percentage of participants who allocate the time invested in the use of ICTs and social networks to achieving the purposes for which they were asked. We can see that the main

use of these tools is to maintain contact with family and friends (74.70%), followed by a very similar percentage for the use of e-mail messaging services (72.10%). Other of the most frequently expressed purposes, which are above 50% of participants, are the monitoring of news and current affairs (67.90%) and the use of online banking services (68.40%). As for the purposes least indicated by the subjects surveyed, we find the option of playing video games (8%) and meeting new people (3.30%).

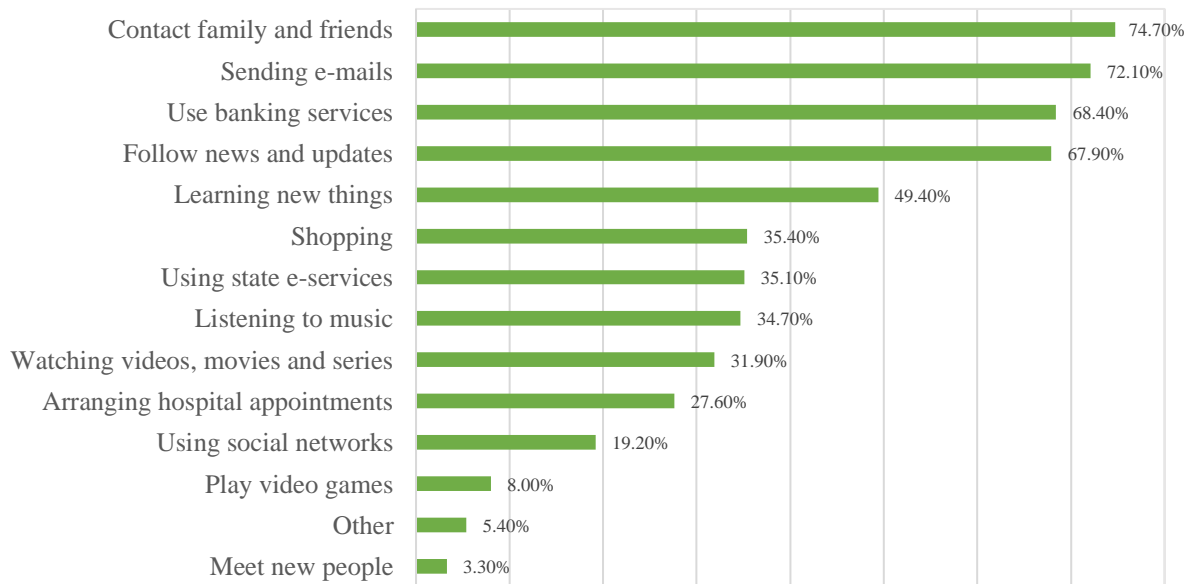


Figure 1. ICT and social networking activities and percentage of participants who spend time on them

Continuing with this analysis of how the elderly make use of ICTs and social networks, Table 3 shows the average time that the participants in the study reported spending on these resources on a weekly basis. With respect to ICTs, the resulting average time of use is 14.98 hours per week, while the average time spent using social networks is 7.09 hours per week. It should be noted that the values obtained corresponding to the standard deviation are very high, both in terms of ICT use ($SD = 12.67$) and in relation to the use of social networks ($SD = 7.92$). This is evidence of the notable differences in the time spent using these tools among the study participants.

Table 3. Descriptive statistics of time spent using ICT and social networks.

	M	SD
Time of use		
DI_H Hours per week that you use ICT	14.98	12.67
RS_H Hours per week you use social networks	7.09	7.92

Table 4 shows the mean scores and standard deviations for each of the items corresponding to the analysis of the consequences that the pandemic has had on the use of ICTs and social networks in the elderly. In all cases, the total mean of the indicators is greater than 5 ($M = 7.07$), a value that represents the intermediate value on the scale used (0-10). Considering this data, it can be seen that the effects that COVID-19 has had on the way technological tools are used among the elderly have been notable.

The indicator with the highest score is the one referring to the increased use of ICTs ($M = 8.33$), followed by the one referring to the increased use of social networks ($M = 8.10$). These results, with considerably high scores, show that the elderly have dedicated considerably more time in their daily lives to the use and enjoyment of these tools since the arrival of COVID-19 compared to the role that ICTs and social networks previously played in their lives.

Continuing with the indicators that have received higher scores, we find those that refer to the educational and training development of the participants. In this block are the items referring to increased access to online education ($M = 7.71$), the use of innovative educational and pedagogical resources regulated by ICTs ($M = 7.50$) and increased autonomy for the acquisition and development of learning through technology ($M = 7.36$). With slightly lower scores for these indicators, the subjects surveyed indicate as changes derived from the pandemic a general improvement in digital competence ($M = 7.16$) and the increase in ICT methodologies that, as students at the University of Experience, allow them to be active agents of their own learning ($M = 7.08$).

The indicators with the lowest averages are those that refer to the use and incorporation of these tools in a more personal sphere of the participants. In this line are, in first place, the items linked to greater flexibility and management of technological resources (Flexibility: $M = 6.92$) (Management: $M = 6.83$). These are followed by indicators related to optimizing time through technology ($M = 6.74$) and learning to use social networks and ICTs as a means of social contact with friends and family ($M = 6.29$).

The item that received the lowest score refers to the frustration that older people have experienced due to not knowing how certain ICT resources and social networks work (M = 4.80). However, despite obtaining the lowest mean score, it should be noted that this indicator is the one with the highest standard deviation (SD = 2.85), making it the item with the greatest variety of opinions. This result shows the great difference that exists in terms of the skills and competencies to make use of technology and the resources it offers us among the elderly.

Table 4. Descriptive statistics of the consequences of COVID-19 on the use of technology.

		M	SD
COV1	Increased use of ICTs	8.33	1.99
COV2	Increased use of social networks	8.10	2.21
COV3	Great frustration due to lack of knowledge of how ICTs and social networks work	4.80	2.85
COV4	Learning to relate to friends and family through social networking and ICTs	6.29	2.80
COV5	Greater flexibility in the use of technology	6.92	2.42
COV6	Improved management of ICT resources	6.83	2.45
COV7	Increased use of ICT-mediated participatory active methodologies.	7.08	2.42
COV8	Increase in online educational models	7.71	2.33
COV9	Increase in educational and pedagogical innovations using ICTs.	7.50	2.27
COV10	Increased autonomy in learning with ICTs	7.36	2.31
COV11	Improved digital competence of the entire population	7.16	2.42
COV12	Improved time utilization using ICTs	6.74	2.59

Scale 0-10

As a last quantitative analysis, the sociodemographic variables referring to age and gender were taken into consideration to analyze the relationship between these variables and the changes that the respondents have undergone in their use of ICTs and social networks. As shown in Table 5, negative correlations were found between the age of the participants and most of the indicators that refer to the changes they have experienced with respect to the use of technology because of the emergence of COVID-19. This result indicates that older people have perceived fewer changes in their lives in relation to technology, while younger subjects have changed more their way of relating to technological tools since the beginning of the pandemic. The only indicators that do not fulfill this relationship are those referring to a feeling of frustration with the use of ICTs and social networks, and to the acquisition of knowledge to socialize with friends and family using these tools. Therefore, none of these aspects has been modified because of the situation derived from COVID-19. With respect to the second sociodemographic

variable analyzed, gender, it should be noted that no significant correlations were found with any of the questionnaire items.

Table 5. Correlations between indicators corresponding to changes derived from COVID-19 with respect to age and gender

		COV1	COV2	COV3	COV4	COV5	COV6	COV7	COV8	COV9	COV10	COV11	COV12	Age	Gender
COV1	Pearson Correlation	1	.860**	.218**	.433**	.573**	.565**	.654**	.621**	.613**	.593**	.486**	.423**	-.211**	.033
COV2	Pearson Correlation		1	.216**	.472**	.595**	.541**	.598**	.589**	.578**	.556**	.482**	.399**	-.194**	.056
COV3	Pearson Correlation			1	.465**	.243**	.264**	.228**	.247**	.242**	.246**	.258**	.268**	-.025	.006
COV4	Pearson Correlation				1	.659**	.654**	.541**	.408**	.402**	.430**	.473**	.447**	-.065	.090
COV5	Pearson Correlation					1	.877**	.804**	.638**	.571**	.597**	.585**	.509**	-.274**	-.026
COV6	Pearson Correlation						1	.818**	.626**	.624**	.611**	.585**	.551**	-.262**	-.006
COV7	Pearson Correlation							1	.740**	.699**	.681**	.619**	.574**	-.289**	-.044
COV8	Pearson Correlation								1	.874**	.827**	.680**	.583**	-.254**	-.024
COV9	Pearson Correlation									1	.898**	.655**	.635**	-.274**	-.002
COV10	Pearson Correlation										1	.706**	.666**	-.292**	-.016
COV11	Pearson Correlation											1	.786**	-.284**	-.050
COV12	Pearson Correlation												1	-.192**	-.022
Age	Pearson Correlation													1	-.038
Gender	Pearson Correlation														1

** . The correlation is significant at the 0.01 level (bilateral)

With respect to the qualitative information collected through the open questions that focused on the opportunities and barriers that the participants had encountered in the educational environment, there was a variety of perceptions in the testimonies given. Regarding the opportunities that ICTs and social networks have offered them during this time of pandemic, they mainly point out aspects linked to the increase in their self-esteem by keeping themselves always updated, discovering the many possibilities that ICT resources can provide them with and access to educational spaces:

Participant 5: They have helped us not to be isolated without educational training. We have started a completely different and unthinkable educational formation to the one we have received up to that moment. It has served us as self-confidence in the face of a completely unpredictable situation and has helped us to live in a modern world.

Participant 8: I love the benefits of technology for work, study and personal growth. It puts at your disposal tools and knowledge that if this was told to me in my youth would have sounded as unreal as living on Mars.

Participant 15: In my case, a greater use of it has helped me to take several courses, I have joined different conferences and it has allowed me to continue growing as a person.

On the other hand, the people who have participated in the study also point out that, despite recognizing the potential of ICTs, the main barriers they have encountered and continue to encounter refer to the lack of physical contact - while placing great value on face-to-face contact - the discomfort experienced due to the lack of knowledge and skills with technology and the existence of the generational digital divide:

Participant 7: The use of technology in teaching has been necessary during the COVID-19 pandemic and has been a very useful tool during periods of confinement, but this does not mean that it can replace face-to-face teaching. Face-to-face teaching provides direct contact with teachers and peers that cannot be achieved in any way with online teaching.

Participant 3: It has been an unplanned 'leap' into digital technology in teaching. In extreme circumstances this technology does a good service, but I like face-to-face teaching above all.

Participant 6: Not having studied digital technologies when I was a student, sometimes it causes me a lot of anger and frustration not to know how to handle myself well on the computer and cell phone. It has upset me a bit in the educational process because I am not very good with technology. Sometimes it has been very difficult for me to continue studying.

Participant 13: *There are people who do not have internet and computer to be able to study and this will have meant a delay. The need to reduce the gap that may have widened with those who barely have access to digital technology.*

As for the social sphere, the main aspect that has been highlighted in a fairly generalized manner refers to the opportunities for communication with loved ones that the elderly have found. New ways of communicating have opened up a range of possibilities to reduce the feeling of loneliness of these people and to occupy their time with their loved ones, even if it has been through a technological device. However, opinions have also been gathered that point to this type of communication as a barrier, understanding that ICTs and social networks cause the loss of essential components in any conversation, such as the emotional charge and "face-to-face" contact:

Participant 1: *It has served as an accompaniment, as a communicator and as a means to relate with others. I think it has been basic in this time of confinement.*

Participant 4: *Having to be at home has increased the need to feel connected, even if it is not physically.*

Participant 15: *It has helped us to relate to each other in difficult moments when we could not do it in person.*

Participant 14: *Personal and emotional contact has been lost. Socialization has been reduced.*

Participant 2: *In spite of seeing advantages, one negative aspect has been the isolation that social networks bring about. Only by looking into the eyes of your interlocutor can you grasp the feelings that move the words.*

Finally, as in the case of the educational dimension, the generational digital divide is once again mentioned as a barrier, in this case in the social sphere. The lack of technological competence and the difficulties in accessing digital tools mean that social inequalities are exacerbated and more and better support is demanded in order to make use of these resources:

Participant 10: *It has further opened the generation gap in the use and management of technology. It has been seen in online appointments for vaccinations and family doctor appointments. Older people have had to be helped by family, friends, social centers.... It will be necessary to promote the use and management for the elderly.*

Participant 9: *I think it has made visible the social and economic differences derived from an increasingly manifest social inequality.*

DISCUSSION AND CONCLUSIONS

After analyzing the results and the information obtained, we proceed to present the conclusions of the study in accordance with the objective of the research. In general terms, the results show that the emergence of COVID-19 has implied multiple and diverse changes in the way in which older people use ICTs and social networks. Such changes have been reflected to a greater extent in younger people, while older participants have experienced fewer changes. However, despite researchers such as those of Vorrink et al. (2017), Keränen et al. (2017) and Halmdienst et al. (2019) indicating that age and gender are factors influencing technology use, no gender differences have been found in this study.

On the other hand, the empirical evidence available so far (Bakshi & Bhattacharyya, 2021; Kulmala et al., 2021; Llorente-Barroso et al., 2021) has indicated that technological tools have not only been indispensable for young people since the beginning of the pandemic, but that older people have also found in them new ways to stay connected with reality and have incorporated them into their lives. This fact is also reflected in this study, since the most notable changes in the way older people relate to ICTs and social networks is the increase in the time they devote to their use. We found great variety in terms of the time spent using these tools, so that some people use them very occasionally and others have these devices and platforms very integrated into their daily lives.

Among the purposes for which the elderly use ICTs and social networks, communication stands out. The people who participated in the study point out the usefulness they have found in these tools to be able to stay connected with their loved ones at times when physical contact was not possible. These opportunities in terms of ways of relating have allowed older people to avoid feeling lonely and reduced the feeling of isolation in difficult situations. Previous research such as Yang et al. (2020), Garfin (2020) and Lee et al. (2021) also point to the important role that technology has played during the pandemic in terms of communication for older people. Similarly, studies by Bruggencate et al. (2019), Schlomann et al. (2019) or Sims et al. (2017) also confirm that

this connectivity produces a feeling of less loneliness among older people, so that their social well-being is enhanced. However, we also found opinions from a less positive view, since part of the participants consider that this type of communication harms relationships as other components such as personal and emotional contact are relegated to the background.

Considering that the research participants are students at the University of Experience, it is also worth noting the impact that technological media have had on their educational process since the beginning of the pandemic. During this time, these people have incorporated online educational models into their training routine, while at the same time they have seen how ICTs have gained strength and prominence and have offered participatory and innovative methodologies. This has also allowed them to improve their digital competence and become more autonomous in the management of their own learning with ICTs. The training offered at the University of Experience aims to favor the adaptation and social updating of students to reinforce their self-esteem (Gasparyan et al., 2019; Lai et al., 2021). The multiple benefits that ICTs bring to the educational field and access to new knowledge (Sims et al., 2017; Castellacci & Tveito, 2018), as well as to the well-being of individuals (Zambianchi & Carelli, 2018; Morton et al., 2018; Zambianchi et al., 2019; Casanova et al., 2020) have allowed such an objective to be developed despite the pandemic. Participants have indicated that technology has allowed them to continue their education by approaching the current world in which ICTs play a fundamental role, which has increased their self-esteem while they have experienced greater personal growth.

Likewise, despite the multiple benefits that ICTs and social networks have brought to the older population in this time, the generational digital divide continues to be a social problem. The participants have mainly expressed the difficulties derived from the lack of access to technological means, both because they do not have the tools that would allow them to do so, such as computers, smartphones or internet, and because they lack the necessary digital skills and competences. This has caused problems at the educational level, but also at the personal level, such as making appointments with medical services or communicating with other people. In this way, the inequalities we live with, in this case determined by age, in a society determined by the aging of the population, become

evident (Zambianchi et al., 2019; Casanova et al., 2020; Guzman-Parra et al., 2020; Canedo-García et al., 2022).

In this same line concerning digital competence, the changes concerning the improvement of technological skills since the outbreak of COVID-19 have not been too remarkable. Although there has been a slight increase in the flexibility of older people in using ICTs and social networks and in managing these resources, so that they now have greater learning in this area, progress is still limited. Similarly, it should be noted that the results do not show a generally high degree of frustration with the use of these tools due to lack of knowledge, but that the answers given differed greatly. Some of the respondents feel little or little frustration, while others have indicated high levels of this feeling, which shows that the form and capacity of access to technology presents many differences and inequalities. In this way, and in the interest of favoring more inclusive and fair societies in which all people can be active agents of the same without being in disadvantaged situations, the need to carry out actions that favor generalized access to technological media is reaffirmed, regardless of the characteristics of each person (Evans et al., 2015; Lázaro et al., 2015; Macedo, 2017; Abdullah et al., 2017; Halmdienst, 2019; Zambianchi, 2019; Wallcook, 2019; Schlomann et al., 2020; Choudrie et al., 2020; Canedo-García et al., 2022).

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