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COVID-19 Emergency: Boosting Digitalization and a Missed Opportunity for Acquiring Digital Literacy in the Old Population

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Abstract. The COVID-19 crisis has accelerated the adoption of digital content and services, particularly in Italy, a country historically slower in embracing communication technologies (European Commission, 2023). Mobility restrictions have hastened the digitalization of daily life, including communication, entertainment, and utility services (Auditel & Censis, 2022). Older individuals, traditionally less digitally proficient, have faced challenges adapting to this rapid digitalization (Rolandi et al., 2020, NIHR, 2022). However, early evidence suggests that this digital acceleration may not be sufficient to bridge the digital divide, especially among older populations (Litchfield et al., 2021, Colombo et al., 2023). This paper explores the changes occurring in the relationship between older people and new technologies based on data provided by longitudinal qualitative research, which involved a panel of 40 over-65 residents in the Lodigiano region, the first red zone – affected by the pandemic and its restrictions – in Europe. This contribution aims to highlight how active seniors have experienced a transformation in their approach to technology from the onset of the pandemic (2020) to the present day. The interviews were transcribed verbatim and then imported into the NVivo application for content analysis. Grounded Theory (Glaser & Strauss, 1967) was utilized, involving several stages. The analysis also aimed to formulate ideal types for interpreting the diverse approaches to digital adoption among the older population. From the present study, it emerged that the rapid process of digitalization during the COVID-19 pandemic has not effectively bridged the digital divide, but rather widened it. The swift digitalization of public services highlights the challenges in ensuring inclusivity, especially for older individuals. While digitalization can benefit those with support networks, it further marginalizes isolated seniors. Policy-makers need to consider existing caregiver networks to promote digital inclusion among older individuals.

Keywords: Ageing, ICTs, Covid-19, Digital Divide, qualitative methodology

1. Introduction

This study aims to explore the change that has occurred in the relationship between older people and new technologies during and after the COVID-19 emergency (2020–2023): in particular, what aspects of their life older people are most interested in using digital technologies for and what the main challenges are.

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The study will therefore explore how older adults interact with digital technologies, including changes in their usage patterns, exploration of new applications, acquisition of new skills, and the challenges they face. Additionally, the study will examine older adults' experiences with digital services, considering both advantages and disadvantages, their use of the Public Digital Identity System (SPID), and the support they receive. Finally, the study will investigate the changes in the usage of digital tools by the older population following the pandemic.

An increase in the overall production and consumption of digital contents and services was empirically noticed during the first phase of the pandemic (in some ways the most intense and dramatic, due to its newness and to the uncertainty it brought along). The crisis has enhanced both the availability and the consumption of digital material and services, particularly in Italy, a country that has historically lagged behind in the diffusion of communication technology (European Commission, 2023).

Ever-growing constraints on contact and movement have prompted the digitalization of numerous services and aspects of daily life, including communication (video calls, email), entertainment (the proliferation of OTT streaming platforms), and utility services (eGovernment and eHealth). This rapid (and frequently imposed) digitalization process has provided new segments of the population with the opportunity to expand their understanding of digital tools (Auditel & Censis, 2022). In particular older people, a group that is usually less digitally engaged compared to younger cohorts especially in Italy, have had to cope with the rapid digitalization of relationships (Rolandi et al., 2020) and public services (NIHR, 2022), while still struggling to keep up with the overall digital growth (Litchfield et al., 2021).

At that time intriguing ideas were proposed, based on the notion that the pandemic would spread ICTs even among the most resistant groups such as the seniors, according to Rogers' famous categorization (1962).

Regarding older people, it was thought that the necessity to communicate with family members and friends would have resulted in a digital literacy impact that would not be reduced by the virus' stall and (ideally) complete containment. However, the initial data and actual facts make this idea hazier (Lai & Widmar, 2021) .

Three years after the pandemic, our premise is that the effect of its diffusion on existing seniors has been minor. The statistics (European Commission, 2023)and our filed research show that the pandemic has rather expanded the gap between older and younger generations and between already digitalized older people, who are becoming increasingly able, and resistant older people, who are increasingly unable to use advanced digital services.

This article is divided into three parts. At first it focuses on the analysis' perspective, oriented towards the recognition of digital divide not only as a starting point for the spread of digital technologies and related practices, but as a permanent context even reinforced by the pandemic crisis. The second section investigates the changes in the relationship between older people and new technologies, based on data from a longitudinal qualitative study (Active-it) involving a panel of 40 over-65 residents from the Lodi-

giano region, Europe's first red zone thus affected by the pandemic and its restrictions. Finally in the last part there will be conclusions and some policy recommendations.

2. Theoretical background: aging, digital divide, digital public services

2.1. The first-level and second-level digital divide

Over the last few years processes of technology diffusion and adoption by the over-65s have been at the centre of the academic debate, including in Italy (Pirone et al., 2008; Colombo et al., 2015). Special attention has been paid to the reasons why and ways in which older people use technologies, as well as to the factors that make many older people resistant to the use of ICTs, resulting in a steep Grey Digital Divide (i.e. the difference in technology penetration between older people and the rest of the population) in Italy compared to other European countries (Sala & Gaia, 2019).

The first research on older people's adoption and use (or nonuse) of ICTs were conducted under the theoretical framework of the digital divide. The term "digital divide" was coined to describe the disadvantage in access to communication platforms as well as the subsequent disadvantage in access to information (Compaine, 2001). According to the research on the digital divide, exclusion from the digital, ICT, and network society has an impact on all aspects of life, including education, sociability, culture and entertainment, personal interactions and political engagement (Warschauer, 2002). In the framework of the so-called "first-level digital divide," research initially focused on the socio-demographic features and disparities between those with available technology and Internet (or telephone line) connections and those who without (Loges & Jung, 2001).

In recent years, the spectrum of meanings that the term digital divide has come to designate has grown over time (Fang et al., 2019). There has been a shift in the assumption that, in addition to the difference in access to ICTs and the Internet, disparities between individuals were primarily related to the use of technologies: this is referred to as 'second-level digital divide' (Hargittai, 2003). The digital divide has begun to be viewed as a developing social phenomenon: it is no longer considered as a single gap, but as a collection of social, economic, and technological inequalities that define the phenomenon's complexity. The literature on the digital divide has thus been more recently expanded by theorists who have placed ICT, technological dissemination, skill acquisition and social concerns at the core of their process of thought (Hargittai & Dobransky, 2017). In the last period, research has focused on the examination of various types of skills (technical, verbal, and mathematical), qualitative distinctions in technology usage as well as the links between use and wider economic and societal trends. According to this perspective on digital divide, what matters is not technology ownership but rather people's competence in managing risks and opportunities (Livingstone et al., 2012). Digital skills involve not just understanding how to technically utilize a medium, but also managing and analyzing information resources on the Internet and taking use of the Internet's potential (Ragnedda, 2018).

2.2. Grey digital divide between normalization and stratification

In the debate over the digital divide (both first and second level), age has long been seen as one of the most important socio-demographic criteria influencing the spread and utilization of ICTs as well as the degree of digital skills. According to some authors, the 'grey digital gap' (Millward & Graf, 2003) is a simply generational phenomenon that will pass with time: the new digital generations will outnumber the old analogic generations.

This interpretation is consistent with the 'normalization' hypothesis, which aims to closing digital divides: it is based on the prediction that a level of saturation in the diffusion of technologies will be reached over time, thus allowing even those groups and individuals who were initially behind to catch up with early adopters.

The gap between users and nonusers will be gradually filled as a result of price-cutting initiatives or of technological progress – in terms of better ease of use.

This is a theory that is frequently endorsed not just by public policy-makers (who assume, for example, that the decreasing in prices of technology is sufficient to assure their proliferation, see (Carlo & Sourbati, 2020)), but also by early academics working on digital divides (Compaine, 2001).

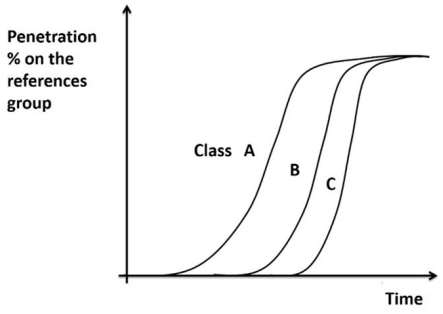

Figure 1: **Model of normalization**

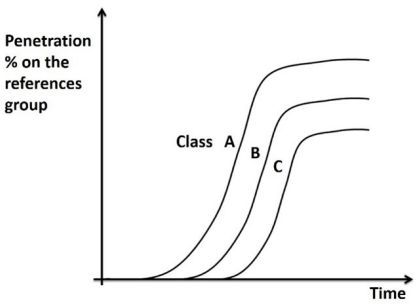

Figure 2: **Model of stratification**

The discussion about digital inequalities has recently broadened to incorporate a new perspective on technology transmission known as "stratification." The stratification model is more concerned with the concept of inequality, arguing that those with a relative advantage in terms of knowledge and access to technology will increase their privileges while, on the other hand, groups characterized by a slow and difficult adoption of new technology will never close the gap (Warschauer, 2002).

As a result, although the normalization hypothesis predicts that gaps would close (over time), the stratification hypothesis argues that it will be impossible to heal digital inequities without adequate public measures, since they are embedded in social inequality. Van Dijk stresses how this second model properly portrays the long-term evolution of digital disparities because it takes into account uneven access, which is connected to people's personal, interpersonal and social traits and abilities, including age (see van Dijk, 2005).

2.3. Older people and public digital services

The COVID-19 emergency and the restrictions due to shut-downs and quarantines have provided an opportunity (and an obligation) for governments to rethink many services digitally. Public administrations everywhere, including in Italy, have digitized both information and communication channels (the physical counter and telephone call centre have been joined and sometimes replaced by online and automated contact channels), and even more complex administrative practices as well as access to archives and databases containing with personal information. Furthermore, Italy is among the European nations with lower levels of digitalization of public services (European Commission, 2022). Only in recent months and during the emergency phase of COVID-19 Italian institutions gave a stronger push to digitalization processes in public administration as e-health, public digital identification, delivery of social security benefits. However, there is still little research investigating the impact of this (heralded) digital revolution on public services, nonetheless the digitalization of public services could represent a new source of social exclusion for older people (Walsh et al., 2017). By exclusion from services, we intend "the condition (and the processes leading to it) that involves the lack or denial of services in later life, to a larger extent than what might be considered as 'normal' for the majority of people, with a negative impact both at individual and societal levels" (Draulans & Lamura, 2021). The combination of multilevel factors may result in older people being excluded from digital public services. For example, at the institutional level, policies, norms, and attitudes embedded in the process of public service digitalizsation may have a substantial impact in limiting/reinforcing exclusion from digital public services (Schou & Pors, 2019). The way in which public documents describe and imagine older people's usage of digital public services serves as a useful predictor of how institutions intend to approach the problem of digital inclusion among older people (Valokivi et al., 2023). At a social level, public policy must foresee programs that aid seniors (and all other vulnerable groups) in the transition to full digitalization and utilization of digital public services. Support networks (both official and informal) can assist older people in remaining included in the digitalization process (Alexopoulou & Åström, 2022). Despite widespread concern about the social impact of digital welfare (Hall, 2008), there have been very few researches on the institutional procedures and organizations that facilitate the acceptance of digital public services among older people (Hansen et al., 2018). Finally, there is the level of specific characteristics: according to an ICT usage study, people who are older, less educated, poorer and/or in poor health, or live in rural areas are generally at risk of being excluded from digital media (e.g., Hunsaker & Hargittai, 2018). However, almost no study has been conducted in areas of e-government, about the use of services in the everyday life of older people, their resistance, and needs.

3. Methodology and sample

This research is part of the project "*XXX anonymized.*" Its main objective as regards the qualitative part is to longitudinally investigate the consequences of the COVID-19 outbreak on older people's everyday-life practices, by exploring the resources employed to react to the challenges brought about by the health emergency. This research approach is characterized by its strong relational component, involving at least two figures, namely the interviewee and the interviewer who together construct and reconstruct data through a mutual interaction (Tang, 2002). Longitudinal qualitative research (LQR) introduces additional complexity in data collection and in the interaction between interviewees and interviewers due to the extended involvement of participants in the study and the turnover of researchers in the field.

In the specific context of the LQR research project, the relationship between interviewees and interviewers followed a well-structured protocol. The study involved a starting panel of 40 men and women aged 65 to 80 residing in the first red zone during the initial wave of COVID-19 in spring of 2020. This panel of participants was reached via video interviews (Melis et al., 2022), entailing a strong interaction between the interviewer and the participants. 31 of those same individuals were contacted again in 2021, with a decrease in number due partly to the passing of some of them and partly to the intrinsic challenges of maintaining an ongoing participation in the study.

The third phase, which took place between 2022 and 2023, reached 23 participants who were part of the previous groups and further expanded the panel by adding 17 participants. The last results allowed for the consolidation of the panel formed between the first and second waves while extending participation to new individuals to have an overall sample of 40 interviewees (Table 1).

Table 1. **Evolution of the panel between the first and third waves**

	I wave – 2020	**II wave – 2021**	**III wave – 2022**
Interviewed	40	31	40

The interview script for the third wave focused on the impact of the coronavirus pandemic on the daily lives of the participants, with a particular stress on the use of digital services. Specifically, the focus points:

1) Relationship with Digital Technologies – We examined the participants' relationship with digital technologies, including changes in their use, discovery of new applications, acquisition of new skills and challenges encountered when using these technologies.
2) Digitalization of Public Services – The participants' past experiences with digital services were addressed, including the advantages and disadvantages noticed, the use of the Public Digital Identity System (SPID), and the user support received.

3) Perspectives on the Future – All participants were encouraged to share their perspectives on the future of digital services and to express their opinions on the course of the pandemic two years after its onset.

The interviews were transcribed verbatim and subsequently imported into the NVivo application for content analysis. An approach based on Grounded Theory (Glaser & Strauss, 1967) was adopted, which involves the following stages: (1) an initial reading, free from the spectre of research hypotheses and aimed to understanding the textual content without being organized according to predefined categories; (2) identification of open coding, aimed at identifying the initial codes useful for segmenting the text; (3) more specific axial coding, in which some subcodes were also identified and reorganized; (4) selective coding, through which more generic and abstract thematic categories were identified.

4. Data presentation and discussion

Starting from the interview transcripts analysis, we will now address the impact of COVID-19 on seniors: carefully examining the strategies adopted by seniors to cope with the challenges that emerged during the pandemic and analyzing how these strategies have evolved in response to the changing pandemic situation. A crucial aspect involves exploring the social and digital resources used by the seniors to adapt and respond to the changes introduced by the pandemic, with a specific focus on the fundamental role of new technologies. It will be of particular interest to observe how these strategies and resources have varied over time, considering the evolving circumstances related to the course of the pandemic and the presence of prior digital literacy skills among the seniors.

The two key questions that will guide the presentation of qualitative data are the following: What experiences did the interviewees have with digital services (public administration, healthcare, shopping, banks, post offices)? What are the advantages and disadvantages reported by the interviewees in using digital services?

The panel of interviewees showed significant variations in digital usage, grouping into three main categories or ideal types:

1. Digitally reinforced seniors: These are individuals who possess good digital skills and are proficient users of technology.
2. Digitally resilient seniors: These individuals are in the process of learning digital skills in response to the COVID-19 emergency and receive support in their digital experience mainly from family or friends.
3. Digitally resistant seniors: Despite the pandemic, these individuals have limited familiarity with technology and lack the help needed to acquire digital skills. However, they are part of support networks for accessing online services.

4.1 Digitally reinforced seniors

In the first category of *digitally reinforced seniors*, we can observe individuals who stand out for their significant proficiency in using digital technologies. They are predominantly male, with previous office jobs and in the younger age group (between 65 and 70). These individuals have acquired a strong foundation in using digital devices and services and prove to be conscious users of these technologies. This means that they not only regularly use devices like computers, smart phones, and tablets, but also possess a deep understanding of their functionalities and applications. Digitally reinforced seniors are capable of fully utilizing the digital resources available to them to perform a wide range of activities ranging from online communication to managing banking transactions, accessing online public services, and searching for information and entertainment on the internet. They are aware of the opportunities offered by technology and understand how it can enhance their quality of life.

This profile of seniors represents an example of positive adaptation to the digital age, as it shows that advanced age is not necessarily a barrier to acquiring advanced digital skills. The presence of digitally reinforced seniors indicates that, with the right support and access to training opportunities, older individuals can become active and aware users of digital technologies, thus debunking the myth of an inevitable generational divide in technology usage.

R: (...) You mentioned that even before the digital transformation brought by Covid, you were someone who used technology. How did you first start getting acquainted with these tools, like computers and the Internet?
I: I worked in a team for more than 40 years.
R: So, work was crucial, right?
I: Absolutely.
(INT_03_10)

In the first excerpt, the interviewee explains that their proficiency in using digital technologies was influenced by their work, where they used computers and the Internet for over 40 years. This professional experience provided a solid foundation for the adoption of digital technologies in their daily life. The interviewee has had a computer at home for many years, demonstrating an early interest in technology. This testimony reflects a well-established digital competence acquired through work experience and a personal willingness to use digital devices.

R: And is there something that perhaps you discovered as necessary during the pandemic in the use of digital technologies and that you continue to use today?
I: Some stuff I had to do with the bank, like money transfers. Before maybe I would go out, go to the bank, wait in line. Now I do it digitally, I use online banking...
(INT_03_09)

In the second excerpt, the interviewee indicate that they started using digital technologies before the pandemic and continued to do so during the health emergency. The interviewee use online services for banking operations and other daily activities, such as managing credit cards. This shows a proficiency in using digital resources for practical purposes. Furthermore, the interviewee highlight that digital technologies have become a convenience, emphasizing their value in daily life.

I: Well, right now, we're using WhatsApp: I use WhatsApp from morning till night; it's very convenient and I use it for a variety of things, such as staying in touch with friends, relatives, acquaintances, work (in the sense of volunteer work), the doctor... with the doctor, I basically only talk via WhatsApp. […]. To give you an idea, half of everything I would have done... now I do it on the PC, I do it on the smart phone; so music, Spotify, YouTube, Shazam, all the songs and various other things, I listen to them like this. Then there are all the utility apps: the online banking […]. So for me, in general, not always because sometimes the apps are poorly made, but that's part of life...[….] One more thing that may sound bizarre [laughs], but it's true: my daughter considers me a "digital enthusiast" and considers herself a "technophobe."
(INT_03_13)

In the third excerpt, the interviewee reveals significant expertise in using digital technologies and a wide range of applications regularly: WhatsApp, managing online communications, web browsers for internet browsing, online banking, and other applications that exhibit a deep knowledge of digital resources. The interviewee emphasizes the convenience of having it all in their life, especially communicating with the doctor via WhatsApp. This testimony highlights a high level of digital competence and the ability to fully exploit the opportunities offered by technology.

I: I use them (public digital services) quite extensively you would say. I mean, I use SPID (Public Digital Identity System) to access public administration portals. I also rely a lot on those e-commerce websites: Amazon, yes, but not too much; more so IBS because IBS sells books and CDs, and those are my passions. So, I often browse there.
(INT_35_03)

In the fourth excerpt, the interviewee confirms their competence in using digital technologies, specifically in the use of SPID and other online services provided by the public administration. The interviewee also regularly uses e-commerce services such as Amazon and IBS. The testimony reflects a profound familiarity with the use of digital services for administrative and online purchasing purposes. Furthermore, the interviewee highlight how they use these digital services not only for themselves but also to help others stay informed about various social benefits and government incentives.

In general, these excerpts depict digitally reinforced seniors as individuals who demonstrate a remarkable proficiency in the use of digital technologies, a deep understanding of applications and an ease in managing daily tasks through online services. These seniors are aware of the opportunities offered by technology and present themselves as active and proficient users of digital resources.

4.2 Digitally resilient seniors

Digitally resilient seniors are a group of seniors who are in the midst of learning digital skills and whose ongoing process has been accelerated by the emergency caused by the COVID-19 pandemic. This is the most diverse group in terms of socio-economic profile. They are both male and female, mainly with previous manual jobs, but there are also some former white collars. These seniors may not have had a comprehensive digital training in the past, but they felt motivated or compelled to develop such skills due to the need to use online services and activities during the pandemic.

A distinctive feature of digitally resilient seniors is that they receive significant support from their family or social network. This can include family members, such as children or grandchildren who help them out when it comes to using digital devices, accessing online services, and troubleshooting technical issues. Additionally, they may receive encouragement and tips from friends or acquaintances who have a greater digital competence.

This phase of digital learning represents a significant transition for resilient seniors, as they are gradually acquiring the ability to use digital technologies for everyday purposes. Although they may still encounter some challenges and obstacles, their determination to learn and the social support they receive are key factors in their adaptation to the new digital reality. This proves that even at an old age it is possible to pick up digital skills and actively participate in the digital society, especially when surrounded by an empathetic and understanding support network.

> *I: I've been using online banking for a long time now, and I find it fantastic. It works very well, and I couldn't do without it anymore. Regarding SPID, of course, it's mandatory for almost all public administration matters, so in this case, I'm forced to use it. At the beginning, my friend and I, whom I meet regularly, almost daily, had a really tough time with it. We couldn't understand anything, and we wasted a lot of time. And then, the moral of the story is that I have to say I've gained some experience now, and sometimes I even teach others how to use it. Let's say that continuous use forces you to deal with this somewhat cumbersome thing, I must say, right? Because it's not really that simple, you see, like digital identity: we haven't used it anymore, I haven't used it anymore. It's been a long time since I used that service. As for the doctor, since COVID happened, for chronic therapies (...) I send him an email, and he sends me the electronic prescriptions.*
> (INT_13_03)

In the first excerpt, the interviewee demonstrates a certain level of competency and adaptability to digital technologies. The use of online banking is described as "fantastic" and essential, indicating that the interviewee has become accustomed to conduct financial transactions online. Additionally, the interviewee acknowledges the importance of digital identity (SPID) in the interactions with the public administration, even though there was an initial learning curve and a need for assistance. This demonstrates a willingness to learn and adapt to new technologies to access public services. Regarding medical matters, the interviewee has adopted the use of emails to communicate with the doctor

and receive electronic prescriptions. This indicates an openness to new methods of communication with healthcare professionals, although initial guidance and adaptation may have been required.

> *R: In your opinion, what are the main things you've found these devices and applications are useful for over the last two years?*
> *I: Well, you see, I started using them during the pandemic. At first, I was a bit hesitant, but then I realized that these are things that can be managed even by people who are not accustomed to these mechanisms.*
> *R: So, they are more, let's say, user-friendly or easier to use for anyone, even without any specific technological skill.*
> *I: Of course, all you have to do is click, and you get the information you want.*
> (INT_03_03)

In the second excerpt, the interviewee admits to having started using digital applications and devices during the pandemic. This indicates a willingness to learn and adapt to new technologies, driven by necessity during the health emergency. The interviewee acknowledges that these applications have become more "user-friendly" and accessible to anyone, including those with limited technological skills. This suggests that the interviewee has noticed improvements in the fruition of digital technologies, thus making their adoption easier.

> *I: I'm not very tech-savvy, to be honest, but I make an effort when I need to. SPID (Public Digital Identity) is not really my thing. Whenever I can, I prefer to get the paperwork done rather than dealing with the digital stuff, especially because I don't have a computer at home. However, SPID, for instance, has become a necessity, so every month I log into the system, and if I come across something I don't know how to do I try to get help and learn.*
> (INT_03_07)

In the third excerpt, the interviewee displays a certain caution when it comes to digital technologies, admitting to not being particularly "tech-savvy." However, they reckon the necessity of using SPID, even though they consider it beyond their expertise. The interviewee is willing to learn and seek assistance in using these technologies, indicating a readiness to adapt and learn.

In general, these excerpts depict older individuals who are resilient in the face of digital technologies because they show a willingness to learn and adapt to new technologies, driven by necessity during the pandemic. The presence of a support network and the observation of improvements in the usability of technologies are key factors that facilitate the adoption of digital services by these older individuals.

4.3 Digitally resistant seniors

Digitally resistant seniors are a category of older individuals who, despite the spread of the COVID-19 pandemic, have little familiarity with digital technologies. In this group there are more women than men, showing how digital skills among Italians older people

are affected by the gender dimension, which is related to the employment background and history. They are particularly housewives, farmers and/or older people than the previous older people studied (over 70). These seniors may have never had significant experiences with digital devices or online services before the emergency. Consequently, they may feel challenged when attempting to incorporate new digital technologies into their everyday lives.

One of the main characteristics of digitally resistant seniors is the lack of help in acquiring digital skills. Unlike digitally resilient seniors who receive assistance from their family or friends, digitally resistant seniors may not have access to this type of support. This missing element can be a significant obstacle for them.

However, a positive note is that digitally resistant seniors are part of solidarity networks that facilitate their access to online services, such as local organizations, volunteer associations or other supportive individuals within the community. These groups or individuals can help digitally resistant seniors overcome some of the digital barriers, e.g., assisting them in completing online transactions or accessing basic services.

Although digitally resistant seniors may initially feel intimidated by digital technologies, they can still benefit from the access to online services thanks to existing solidarity networks. This underscores the importance of community support in ensuring that even older individuals with less digital readiness can have access to essential services in an increasingly digitalized world.

R: All the activity related to digital services like, you know, healthcare, but also online shopping... who handles these things for you?
I: My husband or my children.
R: Okay, what about the electronic health record?
I: Yes, my husband and I manage that... My daughter created a complete guide for us, wrote down all the procedures, all the steps to follow, everything you need to do from start to finish, but it's true that I still delegate to others.
(INT_03_12)

In the first excerpt, the interviewee acknowledges their limited familiarity with digital technologies. For instance, they admit to not actively managing digital services like electronic health record or online shopping. Instead, they rely entirely on family members such as their husband and children, for these activities. This statement stresses a key aspect of senior resistance to digital technology, which is dependence on younger or more tech-savvy individuals to perform tasks involving the use of new technologies. This can be attributed to a lack of confidence in their own digital abilities or to a limited familiarity with such tools.

R: How have you managed with digital public and private services, like SPID or banking?
I: It was a disaster. Well, I gave up on banking. I did create a SPID, but even there, when I have to do... since I retired, which was a good eleven years ago, I only checked my pension once last year – and my friend helped me. I only see my pension as it arrives in my bank account, but I never checked the details of it, if there had been any changes. (...) And when, for instance,

I needed to book appointments, even for vaccinations, my friend (...) always helped me with these things.
(INT_11_03)

In the second excerpt, the interviewee expresses a series of concerns and difficulties related to using digital services. Initially, they mention that they have given up on online banking due to the complexities associated with it. The interviewee also mentions going through the registration process for the Public Digital Identity System (SPID) and how they encountered difficulties. However, they highlight an important aspect of resistance: the need for social and community support. The interviewee emphasize how friends have been essential in helping them navigate the digital challenges. This highlights the importance of social support in promoting the adoption of digital technologies among digitally resistant seniors.

In general, these excerpts confirm that seniors resistant to digital technologies can experience obstacles in using online services and often rely on a support network, both familial and communal, to address these challenges. All the above underscores the importance of social support in facilitating access to digital services for seniors with a limited digital literacy.

5. Conclusions and discussions

This paper explored the changes that occurred in older people's relationship with digital technologies during the pandemic and post-pandemic phases. Despite an increase in the supply of digital services and a strong incentive to transition to the use of online public services, the uptake has been uneven among the Italian population. While some segments of the population have seen a rapid growth in the use of such services in recent years (e.g., mature working-age Italians), older people have not been able to maintain the same rate of development in technology adoption. This gap's accentuation is also confirmed by our qualitative research: some older people, already digitalized, have seen their skills grown while older people who were less digitalized or not digitalized at all struggled more, were more sceptical, moderate, and resistant in their use of digital services. For example, the use of essential digital services in specific areas (such as healthcare, banking, and social security) remains. But the scope of less-essential online purchases and relations has stopped or significantly decreased after the emergency period.

Based on these results, it is useful to make some concluding remarks and reflections.

First of all, despite the initial enthusiasm regarding the accelerated diffusion of technologies even to new segments of the population (Litchfield et al., 2021), the COVID-19 and post- COVID-19 risks-related push in this sense has ultimately been a transitory factor not capable of reducing the digital divide (Lai & Widmar, 2021, Colombo et al., 2023) but rather widening it, as hypothesized in the stratification of digital inequalities (van Dijk, 2005).

A second reflection concerns the ambiguity in the digitalization process of public services. The rapidity of this process in recent years reminds us that digitalization is nonautomatic and depends on the population and their personal biography of adoption and domestication of technologies (and this justify the gap opening between "reinforced digital seniors" and "resistant digital seniors"). The digital turn taken during the COVID-19 emergency made us forget that providing smooth and fully frictionless digital welfare services for everybody is simply not realistic (Dencik & Kaun, 2020). There will always be groups that face inconveniences or limitations when using them. Frictions bring out inequalities: the more we push the technology forward the more there will be people left behind, especially the more analog ones, as older people in Italy are. It is the institutions that have the responsibility to think about digital innovations in an inclusive sense, starting from the citizens' – especially the weakest – perspective, considering their needs and capabilities.

A third and final consideration concerns support networks available to older people. We found out that digitalization can represent an advantage for those who do not have full digital skills but only if they have support networks (for example, children and/or partners) that help them access services. But at the same time and for the same reason, older people who are more fragile and alone are further and further penalized (Bramanti & Nanetti, 2022).

In conclusion we offer a policy-oriented reflections arising from the results of our research which may inform the implementation of digital inclusion policies.

Despite the growing usage of digital services, many seniors were found to still rely heavily on the extensive network of informal caregivers who assist them in dealing with services that are deemed to be too complex. In this way, the idea of "distributed competences" encourages us to move past the individualistic interpretations of active aging and the ICT-enabled empowerment of older users of public digital services (Rasi & Kilpeläinen, 2015). For example, digitally resistant seniors have minimal digital skills, and more complex digital services (such as digital public services) are carried out for them by family members: they are therefore only formally included in that world (maybe they have a bank account or a digital identity, but they have no idea how to use it in practice). In developing public policies to overcome older people's resistance to technology adoption, we need to consider that digital skills could be distributed within the care, relationship, and social network of older people. In the face of strong resistance of older people, the solution is not digitalized at all costs, but rather ensuring the digital inclusion of people in the older people's network (caregivers, children, nurses). Existing caregiver networks need to be more accurately considered by policy-makers when it comes to promote the inclusion of older people in the world of digital services. Imagining 'distributed digital literacy' can offer older people the right to disconnection but at the same time make them enjoy the benefits of digital public services.

A second aspect concerns the need, which emerges from the interviews, that public administrations take charge of digital tutors and help desks to help in case of problems with digital public services. Here again, the desired solution is a 'gentle' digitalization

that also considers the need for 'physical' and face-to-face support that older people demand in case of need: the possible solution is open physical public offices that help access the public administration's digital services.

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