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The Role of Social Ties in Supporting Digital Literacy Among Older Adults in Italy During Times of Crisis and Change*

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Abstract

This study focuses on the role of social ties in supporting digital literacy among older adults in Italy. It explores, on one hand, the influence of intergenerational family support on the digital engagement of older individuals – specifically their use of PCs, smartphones, and the Internet. On the other hand, it investigates the contribution of broader social networks, such as voluntary organizations and community associations, in promoting technology use among older women and men.

The findings highlight how different types of relationships and networks interact to support digital literacy among older adults. They emphasize the important role of both family and broader social support in helping to reduce the age-related digital divide, especially during times of crisis and change. The study also offers valuable insights for shaping existing policies and developing new ones aimed at enhancing digital inclusion among older people.

The paper draws upon data collected by ILQA-19-Longitudinal Study on Older People's Quality of Life, aimed at investigating the social consequences of the Covid-19 pandemic on older people's well-being and everyday life. The first wave of data collection was conducted in the spring of 2020 through semi-structured video interviews with a sample of 40 men and women aged 65 to 80, living in ten villages in the northern part of Italy (Province of Lodi, Lombardy), which experienced the first lockdown in Europe.

* While the conceptual framework and overall structure of this research are the result of a joint effort by all three authors, we outline the primary responsibility for each section to clarify individual contributions: the introduction and conclusion were jointly written by all three; Section 2 was authored by Elisabetta Ruspini; Section 3 by Anita Mancassola; and Sections 4 and 5 were co-authored, with Anita Mancassola making the main contribution through the analysis of the interview data.

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1. Introduction

This study aims to explore the influence of both family intergenerational relationships and broader social networks on the use of digital technologies – PCs, smartphones, and the Internet – among older adults in Italy.

The challenges and advantages of older adults' engagement with digital technologies are key issues in countries, such as Italy, marked by both a rapidly ageing population (Istat, 2023a) and a growing trend of digitalization, two processes that do not show a positive correlation. Despite progress in Internet usage, the adoption of digital devices is still below the average rates observed in EU27 countries; furthermore, significant disparities exist based on region, gender, and age. The Northern part of the country and urban areas have a much broader use of the Internet and specific groups, such as senior citizens (notably older women), encounter barriers to access (Istat, 2023b).

This article contributes to the existing body of literature on older adults and digital literacy by drawing on two influential theoretical frameworks: Mark Granovetter's theory of 'strong and weak ties' (Granovetter, 1973) and Robert Putnam's notion of 'bonding' and 'bridging' social capital (Putnam, 1995). These theories have inspired prior research. On the one hand, the literature has underlined the importance of family support and intergenerational connections for older adults in dealing with digital media, particularly during the pandemic crisis (Thalhammer, 2024). On the other hand, research also suggests that social networks are more complex and dynamic (Cornwell et al., 2008), and can vary significantly among older adults.

The research questions are as follows: How do family relationships influence older adults' engagement with digital devices? What are the benefits of intergenerational exchange? Do tensions arise in family intergenerational relationships? And do social networks beyond kin ties – such as neighbourhood associations or local volunteer groups – also contribute to older adults' digital learning?

By examining how both kinship and non-kinship social networks are interconnected, this study aims to shed light not only on the interplay of familial obligation, social trust, and community ties in supporting older adults, but also on the agency of older individuals themselves. The exploration of these dynamics will contribute to a deeper understanding of how digital literacy among older adults can be effectively promoted. Having diverse networks may

enhance access to social resources as they encompass a broader range of network members, each holding distinct types of resources (Van der Gaag & Snijders, 2005).

This article uses data collected from the Longitudinal Study on Older People's Quality of Life (ILQA-19), which is focused on exploring the social effects of the Covid-19 pandemic on the well-being and daily life of older adults. ILQA-19 was implemented as part of the research project "*Active ageing in changing societies. Older people's social and digital resources in pandemic and post-pandemic Italy (ACTIVE-IT)*". This study specifically examines semi-structured video interviews with a non-probabilistic sample of 40 men and women aged 65 to 80, living in ten villages in the province of Lodi (Lombardy), that experienced Europe's first lockdown.

The structure of the paper is as follows. The first section explores some aspects of the ageing process and the 'grey digital divide' (Millward, 2003) in the Italian context. Subsequent sections outline the methodology and provide an interpretation of the findings – with particular attention to the role of both strong and weak social ties – and conclude with policy recommendations.

2. Older adults, weak and strong social ties

This section aims to provide the demographic, technological, and social context in which this study is situated. It outlines key trends in population aging and digital access in Italy, while also examining how shifting family structures and social networks affect older adults' ability to engage with digital technologies.

Italy is a country experiencing a fast increase in its aging population. Italy is the oldest country in the European Union, with an average median age of above 48 (Eurostat, 2023). As reported by the Italian National Institute of Statistics (Istat, 2023a, p. 8), on 1 January 2023 there were 14.177 million people aged 65 and above, accounting for nearly a quarter of the total population (58,851,000 individuals). Forecasts indicate a significant rise in the population aged 65 years and above. By 2041, the number of individuals over 80 is expected to surpass 6 million, while those over 90 will reach approximately 1.4 million – an unparalleled demographic scenario that presents significant challenges for the country's social and healthcare systems (Istat, 2024).

Along with the aging population, Italy, like other European countries, is witnessing progress in new information and communication technologies (ICTs). Although this technology is available to many, certain population groups, like older adults, face limitations in access. Prior to the pandemic, Internet usage among older people was rising, yet it continued to be significantly

lower than that of younger generations. In 2017, over two-fifths (44%) of individuals aged 65-74 years in the EU-27 had never used a computer. In Italy and Romania, the percentage of seniors who have never used a computer was slightly over 2/3, while it reached nearly 3/4 in Croatia (73%), Bulgaria (74%), and Greece (78%) (Georgiadou Asteriou & Gkeka, 2023, p. 18).

Due to lockdowns, mobility and travel restrictions, the pandemic had a considerable impact on how older adults engage online, with many using the Internet for the first time or depending on family, friends, and peers to carry out activities online for them (Petrovčič et al., 2024). Technology has progressively turned into an essential resource for older adults, allowing them to maintain connections with relatives and friends, access digital health services, and carry out daily activities that were previously done offline. Notwithstanding this, although there have been advancements in regular Internet usage, the use of digital devices is lagging behind the average levels seen in EU27 nations and digital skills are still characterized by strong gaps associated with the socio-cultural characteristics of the population. Data collected by Istat (Istat, 2023b) show that in 2023, 61.7% of 20–24-year-olds living in Italy have at least basic digital skills. This percentage declines sharply with age, dropping to 42.2% among those between 55 and 59 years old and further to 19.3% for people between 65 and 74. Additionally, while over 91% of individuals from 11 to 54 years old have accessed the Internet in the past three months, this figure decreases to 60.4% for the 65-74 age group and falls to 24.7% among those 75 and older (Istat, 2023a).

Internet use is higher in the Northern part of the country and in urban areas and lower in the Southern regions. According to Istat (Istat, 2023a), the percentage of regular Internet users (individuals aged 11 and older who accessed the Internet at least once a week during the last 3 months before to interview) was 75.6% in 2022 (over 40 million individuals), with a higher percentage in the North compared to the South (78.6%; 70.6%). The proportion of regular Internet users among older adults is increasing, but they continue to fall behind: 54.2% for individuals aged 65-74 and 19.2% for those aged 75 and above. On average, men surpass women by 6 percentage points, particularly those over 60 years old (ISTAT, 2023a, p. 165).

Italy is facing additional challenges: increasing rates of separations and divorces, falling birth rates, progressively smaller and more divided households, a decrease in the size of the available labour force, low participation of women and youth in the labour market, and younger generations challenging traditional family norms (Istat 2023b; 2024). In contrast to their parents or grandparents, the younger generations prioritize personal autonomy and career development, resulting in postponed marriages and fewer children. The challenges posed by the transformation of family structures in Italy, particularly concerning the

availability of social capital for older individuals, is well documented by Donati (2007), Donati and Tronca (2008), and Di Nicola (2011). As Italian families become smaller, geographically dispersed, and less intergenerationally cohesive, their capacity to serve as primary vehicles of care and informal learning diminishes. This decline in relational proximity has tangible implications for older adults' ability to acquire digital skills, particularly as digital technologies increasingly mediate access to care and health services, social interaction, and community involvement. These trends put pressure on the Italian welfare system, significantly shaped by the familistic culture (Ginsborg, 1994), which relies on the family unit as the primary provider of care and where intergenerational support is taken for granted.

Considering the interconnection of demographic changes and the essential function of ICT in daily living, it seems crucial to comprehend if family, friendships, and, more broadly, relational networks are playing a role in developing digital skills of older adults. At the same time, it is important to understand if older adults can actively participate in this process.

As outlined above, this research draws on Granovetter's and Putnam's theories to examine how close and more distant social ties jointly contribute to enhancing older adults' digital engagement. According to Granovetter (Granovetter, 1973), social networks consist of both strong ties (close relationships) and weak ties (more distant or casual relationships), each playing different but complementary roles in information exchange and skill development. Strong ties are characterized by interpersonal closeness, frequent interactions, emotional involvement, and provide emotional support. Such close relationships improve understanding of one another's needs and preferences, fostering the offering of advice. However, strong ties may become unavailable due to physical distance, deteriorating health, loss of relationships, or interpersonal conflicts (Lam et al., 2023). Meanwhile, weak ties facilitate mutual exchanges and provide access to new social groups and networks, acting as bridges to new people and information. Putnam (1995) distinguishes between 'bonding' social capital, referring to strong ties within close-knit groups (e.g., family, close friends), and 'bridging' social capital, which involves building connections between heterogeneous groups.

Existing studies have emphasized the importance of family support and intergenerational kin relationships for older people in using digital media, particularly during the pandemic (Thalhammer, 2024). Older adults frequently choose family members as their main source of support for digital technology (Farag et al., 2024) and the younger generations (adult children/grandchildren) contribute to the learning process in different ways: offering help and support, addressing barriers in the learning process, and providing encouragement (Gedvilaitė-Kordušienė & Rapolienė, 2024). Nonetheless, studies have pointed

out certain issues. In some cases, older individuals hesitated to ask for assistance from their relatives as they feared imposing their technological requirements on them, particularly during the pandemic (Sin et al., 2021). Moreover, even if younger family members have the technical experience and readiness to help, they may not have the required teaching skills (Azevedo & Ponte, 2020). While younger people are often presumed to be natural facilitators of digital literacy, they may lack time, patience, or pedagogical strategies suited to older learners. This can discourage older people from improving their digital skills, leading to frustrations for both generations (Farag et al., 2024; Flynn, 2022). Research has also highlighted that obstacles to intra-family support have been intensified by the Covid-19 pandemic, due to increased levels of anxiety and fear (Miller et al., 2024; Thalhammer, 2024).

Current research suggests adopting a more nuanced view of later life, emphasizing that social networks are dynamic (Cornwell et al., 2008) and can differ among older adults. Dimensions such as cultural context, marital status, health conditions, and types of support can shape their structure and function, leading to diverse outcomes. These networks often extend beyond immediate family (strong ties) to include acquaintances, neighbours, and community members. Several studies highlight the growing importance of various non-kin ties, which can be as significant as family ties, showing that older adults may develop diverse social networks beyond spouses, children, and grandchildren e.g., Heenan, 2010; Torrejón & Martin-Matthews, 2022).

Such weak ties provide important support beyond family me3mbers by 'bridging' connections between individuals from diverse backgrounds (Granovetter, 1973; Putnam, 1995). Older adults may participate in neighbourhood associations or local volunteer groups that offer material and emotional support and help facilitate access to external resources such as digital healthcare services. Additionally, weak ties can help resolve family conflicts that may have intensified during the pandemic. Families are linked by strong ties, characterized by a complex mix of feelings, emotions, and expectations, which can sometimes lead to conflicts and reduced flexibility in relationships. At the same time, weak ties – such as peers in community centers, volunteers, or intergenerational learning facilitators – emerge as vital relational resources supporting older adults' digital literacy (Donati, 2007; Donati & Tronca, 2008; Di Nicola, 2011).

As highlighted in previous research (Heenan, 2010), it is crucial, in times of accelerated social change and recurrent crises, to understand how social capital – resources embedded in social networks – is generated and sustained, particularly in relation to older adults. This is especially important because the process of aging has often been associated with negative connotations. Older adults have long been, and continue to be, viewed as a homogeneous group

characterized by inactivity, dependency, and vulnerability. They are frequently perceived as less capable or less interested in engaging with digital technologies, with their participation in the digital society often regarded as passive (Melchior, 2023). Internalized ageism, such as the belief that they are 'too old for' or 'not good enough or young enough for' digital learning, can significantly hinder their motivation and engagement. Ageist attitudes in society can profoundly impact older adults, as such biases often lead to marginalization and discrimination (Ayalon et al., 2021). However, older adults should not be treated as a uniform population (Garavaglia et al., 2023). The challenges they face, as well as their contributions to communities (e.g., as parents, grandparents, volunteers, and citizens), vary significantly. Counteracting these ageist attitudes is essential, especially as older adults are increasingly expected to use digital devices to access information and services (Kim et al., 2022).

3. Methods

3.1. The ACTIVE-IT Project and the ILQA-19 study

This work uses data collected by the research project "*Active ageing in changing societies. Older people's social and digital resources in pandemic and post-pandemic Italy (ACTIVE-IT)*". Running from April 2022 to March 2025, the ACTIVE-IT project aims at investigating the consequences of Covid-19 on older adults in Italy and exploring the relational and digital resources enacted by older people to react to a changing social context. ACTIVE-IT is developed across three research streams. Research stream 1 focuses on offering a quantitative analysis of the social impacts of Covid-19 on the older population in Italy, analysing data from the Italian sample of the Survey for Health, Ageing, and Retirement in Europe (SHARE). Research stream 2 is longitudinally examining the consequences of the Covid-19 outbreak on older people's everyday life practices, investigating the resources activated to address the challenges posed by the health crisis. Research stream 3 is aimed at developing a digital literacy programme targeted specifically to older people, providing them with the digital skills needed to age healthy and actively, in a changing social context.

As previously mentioned, the present research draws on data from the longitudinal qualitative study ILQA-19 (Longitudinal Study on Older People's Quality of Life). The ILQA-19 study collected data in four waves: Wave 1 (2020), Wave 2 (2021), Wave 3 (2022–2023), and Wave 4 (2023–2024). Wave 1 interviews explored changes in older people's daily lives, the role of social relationships, and social media use during the lockdown, along with its impact on their well-being. Specifically, the data were collected to examine how

changes in relationship networks – both within and beyond the family – and in support and care systems influenced their well-being. Wave 1 also aimed to understand the strategies and resources older adults used to adapt to their new daily life, with a particular focus on the role of social technologies (Sala et al., 2020).

This work examines data from the first wave of the ILQA-19 study, conducted in the spring of 2020 with a non-probability sample of 40 men and women aged 65 to 80, living in ten villages in Northern Italy that were among the first to experience the lockdown in Europe.

All interviews were conducted remotely, using semi-structured qualitative interviews via video call software such as Skype, Google Meet, or WhatsApp, according to the preferences of the interviewees. Protocols were adopted to ensure that even those with limited digital experience could participate in the study (Melis et al., 2021a, 2021b). The interviews were recorded, fully transcribed, and anonymized.

3.2. Data analysis techniques

This study develops a systematic thematic analysis (TA) process for creating a conceptual model from qualitative research findings. TA is a means of producing thick descriptions of emerging themes through a process of coding and systematizing data (see for example Braun & Clarke, 2006, 2019; Guest et al., 2012; Liebenberg et al., 2020).

The thematic-descriptive analysis of the empirical material was performed using NVivo software, which facilitated the reduction and transformation of the data. The analysis followed the six phases outlined by Braun and Clarke (2006): familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report.

The transcripts of the 40 interviews were divided into segments – which are parts of text consisting of one or more sentences highlighting individual actions or units of meaning – to develop a preliminary coding frame able to capture the relevant analytical dimensions. The codes, representing sensitizing concepts (Blumer, 1954; Charmaz, 2003), were organized into code families (nodes) that represent specific themes, which are sets of codes belonging to the same semantic field. The selected portions of the interviews were then assigned to one or more coding units, labelling each unit according to the preliminary coding scheme. The initial coding scheme was gradually adjusted when sections of the interviews requiring labels did not fit the existing codes, adding new codes through a recursive process (Saldaña, 2012).

Three macro-themes (nodes) emerged from the analysis, as described in the following coding scheme.

1. Incorporating the digital into everyday life
    a) Activities carried out by older people using technology
    b) Changes in technology use during the pandemic
2. Social and digital connectivity
    a) Intergenerational support within strong social networks
    b) Intergenerational support within weak social networks
3. Challenges and limitations of digital integration
    a) Perceived challenges in using ICT
    b) Attitudes toward technology
    c) Barriers to ICT use among older adults

To analyse the role of intergenerational support, we focused on the second node (2a and 2b), exploring the support younger generations can provide to older adults both within family settings and in broader social contexts, including friendships and wider social networks beyond the family. We then identified and commented on the excerpts from the interviews related to the challenges older adults face in using the computer, selecting those that were also related to intergenerational relationships (3a).

3.3. The sample

The sample of 40 older adults interviewed reflects diversity in social background, marital status, social capital, and digital literacy. Participants were recruited through snowball sampling.

Of the 40 interviewees, 25 are married, 2 live with a partner, and 13 are single – either never married or widowed. A total of 35 participants have at least one child. Regarding education, 20 of the 26 women and 10 of the 14 men have completed either high school or college.

4. Results

4.1 Intergenerational support within strong social ties

The analysis of interviews offers valuable micro-scale insights into intergenerational relationships and the role of younger family members in providing technical support and facilitating access to resources. Kin intergenerational support goes beyond direct teaching to include purchasing devices, setting up accounts, and troubleshooting connectivity issues. These

actions reflect the dimension of functional solidarity (Bengtson & Roberts, 1991; Bengtson, 2001), defined as social cohesion between generations. In the context of digital adoption and use, family members – strong ties – may provide resources to one another and younger family members actively reduce barriers to technology access for older people, enabling their participation in the digital world.

The isolation caused by the pandemic, as noted by the interviewees, also accelerated the acquisition of specific skills (such as making video calls or using social networks). Nonetheless, it appears that it was not the main reason for embracing ICT.

A key factor that emerged was the role of daughters and sons in encouraging their parents' interest in smartphones and computers. They primarily do this by providing the devices and then helping with their use. Many of the interviewees reported that they began using digital devices after receiving them as gifts from their children, aligning with Putnam's (1995) theory about the strength of close-knit family relationships, which foster stronger mutual support – the so called bonding social capital.

In response to the question, "Who or what prompted you to approach these tools?" several interviewees emphasize the key role played by their daughters and sons:

> Regarding the mobile phone, I had one, but I only used it for urgent calls. I kept it with me just in case, but I didn't want to be contacted [laughs]. When I was in the office, I didn't want to be disturbed at work, so I never got used to phone calls. Then my daughter insisted, 'Well, you have to update yourself,' and she convinced me to get this cell phone. 'You have to learn WhatsApp,' and so on. She encouraged me and taught me. (woman, 65-69 years old).

> Both my boys, yes, both of them. I went with them to get it and everything. So, imagine, they chose it for me – something simple, nothing extraordinary. Little by little, I learned to use it, and I really like it. In fact, I told them, 'Thank you for giving it to me,' because it makes me happy, you know, just to feel a bit more connected. (woman, 65-69 years old).

In some cases, a resistance to using technology, particularly mobile phones, emerges (Neves & Amaro, 2012). One interviewee admitted that she initially intended to use the phone only for emergencies. Nevertheless, younger generations often help to reduce this resistance by providing both emotional

and technological support to older family members. Children, in particular, appear to encourage their parents to use smartphones and computers, guiding them through the process and offering practical assistance (Gedvilaitė-Kordušienė & Rapolienė, 2024). This kind of support in using PCs and smartphones is clearly reflected in the accounts of the interviewees:

> No, no, I've always had phones. I even have another phone, the one I used before. It also has a camera and everything, but I only used it as a phone, nothing more. Then one day, my daughter understood and came to me and said, 'Here, I've bought you a smartphone.' I replied, 'Well, explain to me how it works, I mean, what is it like?' And slowly... I mean, I'm not hopeless, I have to say. Not with this. (woman, 75-79 years old).

> Because my son, the one who lives in [EXTRA EUROPEAN CONTINENT], told me the last time he left – because he goes and comes back – 'And then the last time he left, I had to go to a friend's house to see each other on Skype because I don't have a computer... He said, 'Mom, before I leave, I'll buy you a phone, so we can see each other, so you don't have to go to your friend's house.' That was the reason, to see him when we call from [EXTRA EUROPEAN CONTINENT]. (woman, 70-74 years old).

> Well, usually, um... whoever happens to be around [smiles]! No, but usually it's my son and my daughter-in-law, who is very good at it too. So, when I'm really in trouble, I go, knock on their door, and ask. They're very good at it, so sometimes I say, 'Well... it's okay. (woman, 70-74 years old).

> Well, look... especially at my age, if there's no one to show you, to give you a hand... I struggled and learned these things because my daughter showed me first... even simple things, I don't know, maybe I just couldn't get there. (woman, 65-69 years old).

In addition to children, grandchildren also play a significant role in supporting older adults with ICT, as they are key transmitters of technological knowledge to older generations. Thanks to their intuitive familiarity with technology, grandchildren guide their older family members, enhancing digital literacy and strengthening family relationships.

> I've learned, and let's say my 14-year-old granddaughter teaches me a lot because they're kids and they know everything. She taught me how to make video calls, and during the coronavirus period, I wanted to call all my friends, but I didn't know how to use it... so she taught me how to do video calls. She even taught me how to make a three-way call and group calls with four people. (woman, 65-69 years old).

> Less, less. At first, I didn't know how [to make a video call], then my granddaughter taught me and said, 'Grandma, this is how you do it.' (woman, 70-74 years old).

Grandchildren often serve as informal 'digital tutors,' using their familiarity with technology to guide older family members. In doing so, they take on the role of digital mediators (Neves & Amaro, 2012), reducing barriers for older adults by sharing their skills and boosting their confidence in using technology. In this way, grandchildren not only provide the technical knowledge older adults need to navigate ICT but also strengthen family relationships through their involvement, turning shared activities and mutual support into opportunities to enhance family cohesion (Putnam, 2000).

Technological support for older adults may involve different family members, reflecting the flexibility and adaptability of family structures. The interviews show that more distant family ties can serve as a source of support. When children or grandchildren are unavailable or unable to assist, the interviewees seek help from relatives, such as other family members (brothers or sisters) or in-laws (sons/daughters-in-law, siblings-in-law) who have better computer skills, or whose children can help.

> My two brothers and one of my two sisters, they were the ones who taught me [video calls]! They taught me, and then, since I have nephews who are only three or four years younger than me [laughs]! And they have children, so I saw them… the grandchildren of my brothers and sisters are now young, and they started teaching me, and then… well, this thing became pretty easy. At first, I was a bit unsure, but then, little by little, I started to… (man, 65-69 years old).

> My brother-in-law is more skilled than I am, and he's also younger than us. But then, he's one of those people who are particularly – no, no, not me at all, just a little, my husband a bit more, but my brother-in-law is the best, he's our go-to [laughs]. (woman, 65-69 years old).

4.2 Are strong ties too tight?

Despite the support of younger family members proving beneficial in helping older adults enhance their digital competencies, strong ties can also have limitations. Dependence on family members may create barriers to autonomy, as shown by cases where older adults depend significantly on their children or grandchildren for problem-solving and support: this can lead to what is known as 'learned helplessness' (Neves & Amaro, 2012). When children frequently intervene to fix tech problems or do not encourage their parents' desire for external help, older adults may become less inclined to use technology independently, resulting in a reliance that hinders their digital empowerment.

> A bit my daughter, a bit on my own. Some things I figured out by myself... others, most of them, my daughter helped me with. In fact, here, they had – here in the town – several courses for, um... computer skills for adults. And I had thought about going, but she said to me, 'Don't spend your money, I'll teach you better myself.' (woman, 65-69 years old).

> I always wait for my daughter to supervise me [smiles]. Because I'm afraid of making mistakes, of messing things up, you know? So, I wouldn't say I'm very [skilled]... (woman, 65-69 years old).

Depending on help from family can sometimes mean that older adults use digital technologies less directly, which might slow down – or even stop – their learning of how to use ICT tools. While family support can limit the development of personal autonomy, it also offers emotional comfort that helps make digital environments feel less intimidating.

One reason many older adults rely on younger family members is that they often feel anxious or uncertain about using new technologies (Broos, 2005; Igbaria & Chakrabarti, 1990; Mumporeze & Prieler, 2017). Existing research indicates that older individuals typically report higher levels of tech-related anxiety than younger users, due to a range of factors including perceived cognitive and physical declines associated with aging – such as impaired vision, reduced dexterity, slower cognitive processing, and difficulties with learning. (see for example Charness & Boot, 2009; Reid et al., 2024). Moreover, the unprecedented rates of technological change may result in many older people feeling disempowered, socially excluded, and anxious about using ICT (Álvarez-Dardet et al., 2020; Hajkowicz, 2015; Hill et al., 2015). Our respondents express this feeling of anxiety, for instance, by highlighting the concern of damaging technological devices due to improper use:

> Even video calls make me anxious. Even though we did a video call with my daughter and my brother, it's still something that makes me anxious [smiles]. (woman, 65-69 years old).

> I'm trying, I always try... I go on these websites, and I try... but then I'm afraid of messing things up, so I never go through with it! (woman, 65-69 years old).

> I'll tell you, at first, I was afraid that pressing a button would make everything explode! But then, little by little, a bit here and a bit there, I've learned something. (woman, 75-79 years old).

This concern regarding technology might lead to an unwillingness to learn to use these tools, occasionally causing what one interviewee referred to as a "psychological block." (man, 65-69 years old).

The analysis of the interviews also revealed that women tend to exhibit higher levels of anxiety, while men appear more motivated to improve their understanding of computers and smartphones. Although they view themselves as unskilled, male participants appear to possess more confidence in their capacity to manage technology and improve their digital knowledge:

> [...] if the idea behind those who developed these technologies was that even a donkey should be able to use them, right? A donkey, an unskilled person... then it must be easy for everyone. You just have to press the buttons, eh! I mean, it's the simplest thing: just press the buttons. It's not like they're asking you to program it, right, just to use it... (man, 65-69 years old).

> I was using software applications for work, so I didn't have to put much of my own effort into it… But all in all, for what I need, I'm independent, really. I truly am! My son-in-law, whenever I have a little issue I can't solve, either he or my daughter steps in… But the things I really need, which didn't even exist when I started, back when I was in my thirties… (man, 65-69 years old).

This gender difference has been highlighted by other studies (see for example Broos, 2005) and may be related to different elements, interacting with each other. One first element is the gender digital divide generated by sociocultural restrictions to ICT use: from women being prevented from using the Internet or social media by their spouse/partner, family members or parents to limited access to digital education that can support women's personal

development and skill enhancement (Ewe et al., 2023). The low level of engagement with ICT may result in older adults, especially women, underestimating their knowledge and abilities. One further element has to do with the fact that older women experienced more anxiety or depression than older men during the pandemic (García-Fernández et al., 2021; Koma et al., 2021; Paccagnella & Pongiglione, 2022).

4.3 The lack of respect for the pace of learning

Another limitation of strong ties in ICT learning concerns the fact that sometimes children seem unable to respect their parents' learning pace, showing little patience. This can increase the sense of insecurity that older adults feel when approaching technology: existing studies have highlighted that older adults may experience a lack of patience from younger relatives when seeking help with technology, which can discourage them from further engaging with digital tools and lead younger family members to frustration (Azevedo & Ponte, 2020; Flynn, 2022).

> Because I tell my children: show me... teach me too! Everyone, in general, those who have kids that know how to use a computer... I say: show me but take it slow! Think aloud... help me understand, because if you guide me through a task, I can memorize it! Even a little while ago with my daughter... "Oh, I already showed you! I gave you a book, figure it out!"... but damn it! And then I told her, the last time after Christmas: I'll take you to where I used to work, I'll explain to you once the job I did and you're not capable of doing it, let's see! (man, 65-69 years).

> But let's say that since these phones are also mini-computers, I can manage to do a little something, with my children's help, I can manage a bit. Only then, since they get annoyed, I logically just go alone. (woman, 65-69 years).

Younger generations often have the skills to teach but may lack patience in guiding their parents or grandparents, and from this intergenerational technology transfer, frustration can arise. Younger generations, who have grown up with technology, often assume a quicker mastery of skills, while older generations may need more time to adjust.

> Our children gave them to us. They gifted them to us and started showing us how to use them, and so on. After that, we gradually learned on our own… but honestly, if there's something, a novelty, something new… or maybe a message pops up that I don't know how to handle, I always ask them for help… to see what I've done, what I've messed up [laughs]! So, they are still the reference point for me… Later, they might get annoyed too… "Mom, we already told you!"... but I don't remember how to do it [laughs]! (woman, 65-69 years old).

> No, from a technological standpoint, I really struggle. I've had WhatsApp for a long time, but I can't say how long, because my daughter explained some things to me, and then every now and then she says, "You still don't understand!" but I'm quite resistant. (woman, 65-69 years old).

It is interesting to note that several interviewees reported that when they repeatedly ask their children for assistance, the children often seem irritated, whereas this does not appear to be the case when they seek help from their grandchildren.

However, a lack of patience regarding the older generation's learning speed with new technologies might not be completely negative. On the one hand, it may encourage them to seek assistance outside the family, while on the other hand, it might serve as motivation to enhance their skills with computers and phones. This may mitigate the disincentive effect that arises when older individuals rely on their children's assistance with ICT, leading to reduced motivation to learn. As our interviewees explain:

> Yes, yes. [The computer] had been in the house since my daughter was still living at home. So, when my daughter started middle school, she got it. But I [laughs], from 2000 to 2010, I never used it. If I needed something, she would do it. In 2010, she went on Erasmus, and I was forced to learn [smiles]. (woman, 65-69 years old).

> Partly because I'm honestly not interested, so I don't put much effort into learning, but I realize it's becoming… But you know why? Because anything I need to do, I say, "Yes, I'll do it" and then I ask my daughter... and that's starting to bother me [laughs]! My daughter doesn't live with me, of course, so every time it's "Come over, I need to do this, come over, I need to do that"… it's beginning to annoy me, so I'll try to do a bit more on my own. With a bit more effort. Yes, because I wasn't applying myself. (woman, 65-69 years old).

> Just today, when I needed to renew the antivirus, the technician couldn't come and was telling me, "Do this, do that" over the phone, and I didn't understand anything. I ended up calling my daughter, and she did everything, because I'm not tech-savvy, and she handles everything. (woman, 65-69 years old).

5. The role played by weak social ties

The thematic analysis revealed that family intergenerational support played a crucial role in promoting digital adoption among older adults during the COVID-19 pandemic in Italy, although it sometimes undermined their autonomy and self-confidence. Moreover, older adults may not always have family members, either close or extended, available to assist them with adopting new technologies. Thus, it is crucial to consider what Granovetter describes as weak ties, which can link individuals to networks beyond their close circle (Granovetter, 1973). As mentioned in Section 2, Granovetter argues that weak ties play a critical role in the diffusion of information and opportunities, precisely because they connect people to different social groups. As such, weak ties are essential for social integration. Some interviewees indeed highlighted how relationships beyond the family network supported their learning experience, noting that they acquired computer skills through friends and neighbours rather than through family connections. This also reflects Putnam's (1995) concept of bridging social capital, in which weak ties – social interactions beyond the immediate family – facilitate knowledge exchange and access to new resources.

> Moreover, it makes me smile a little because I have this friend who lives in [TOWN], and she told me, 'Hey, do you know how to make a video call? My children taught me,' and she said, 'Come on, let's do a video call so we can at least see each other.' (woman, 70-74 years old).

According to the people interviewed, the primary reasons they use technological devices are connected to both their pre-retirement work and administrative volunteer activities. The interviews revealed that 20 participants in the sample (12 women and 8 men) became familiar with computers because these skills were necessary for their jobs before retiring. To complete work-related tasks, some respondents had to learn how to use computers and software applications, often seeking help from colleagues or company tutors:

> I've never had, in the type of work I did, a secretary. So, I did everything myself, and logically... well, initially with typewriters. Then, as soon as there was the possibility of having a computer, I had a tutor who introduced me to it. Because, logically, I knew nothing about computers... It wasn't very easy to get started. But little by little, I began to get familiar with it. However, I'd say I used the computer primarily for work. (man, 70-74 years old).

> Well, I was a [PROFESSION] – now I'm retired, of course! And at some point, my supervisor had us take a small, really small technology course. And to the amazement of my colleagues – because I'm always a bit absent-minded, you know, a bit... [omitted – they saw that I was managing well. (woman, 70-74 years old).

As mentioned earlier in this paper, belonging to volunteer associations provides opportunities to learn how to use computers and smartphones, while also enabling individuals to expand their social networks and find others they can rely on for technological support:

> Since I'm here at [ORGANIZATION], whenever something isn't working, I turn to someone from [ORGANIZATION] who is more skilled than I am. But I don't have, how should I put it... I don't have a great relationship with it, meaning I've learned how to do the simpler things, and the things that are useful to me. Now, for example, there's the civil service girl who is very good, and so when I'm at [ORGANIZATION] and something goes wrong, she's there... she's my right hand. (woman, 70-74 years old).

> Then, through volunteer work, we organized computer courses for the elderly. And at the school here, we have a high school where students, and also some teachers, helped groups of elderly people start using email and other communication tools. (man, 70-74 years old).

> Ah, maybe it was actually [ORGANIZATION], yes. Maybe it was actually [ORGANIZATION] [that encouraged me to embrace technology] because I used to volunteer there. Before, everything was done by hand – with appointments for the tax assistance centre, which is what I do. To schedule appointments for the various services, it was either done with the computer or not at all. So, since I practically grew up in [ORGANIZATION] [laughs]... Yes, [ORGANIZATION] pushed me to learn. (INT 37, woman, 65-69 years old).

When family support is limited or absent, older adults often shift from relying on bonding social capital to utilizing bridging social capital (Putnam, 1995). Through volunteer associations, they not only gain technological skills and expand their social networks but also have opportunities to use technology for specific tasks. These initiatives foster functional solidarity by broadening and diversifying social connections, reducing isolation, and providing a platform for intergenerational learning and support.

Some interviewees proposed organizing computer courses for older adults or establishing community programs where young people, even for a fee, dedicate time to helping older adults develop digital skills. The expressed willingness to attend such courses reveals a desire among older adults to become independent in using new technologies rather than relying on others for assistance:

> I asked some of my colleagues, but now, well, I've lost touch with them. Then there was the son of a friend of mine. I'm always on the lookout for one of these tech-savvy young people… maybe even to pay them. But I never find one! (woman, 70-74 years old).

> My relationship with the computer and the phone is like this! Really! Also because many times I've asked myself, "I want to take a course to understand it better"… because from now on, unfortunately – or maybe fortunately – we'll always need to have it, we'll always need to use it… for bookings, to book trips. So, I'll have to do something like that! I've made up my mind, and I will! There are those courses, for older people and also for students who go to teach older people how to use it. (man, 65-69 years old).

The interviews also reveal that, although older adults are generally willing to learn, complex interfaces and difficult-to-navigate designs present significant barriers to digital adoption. This highlights the importance of developing devices that are simple, user-friendly, and tailored to the specific needs of older users. Even when motivation and support are present, many older adults identify poor design as a major obstacle. To address this challenge, some interviewees suggest rethinking device design to improve usability and accessibility. The need for simplified interfaces becomes especially critical when older individuals engage more actively with digital technologies but receive limited support from family members.

> I also know that there are tools that can be improved; there are already systems in place, surveillance for older people… there are

> phones with a button that connects to the local council, things like that… services, medicine, things like that for older adults. And that's an area that could be helped and developed, especially for a certain age group – systems that make it easy to connect with a central hub. (man, 70-74 years old).

The interviews conducted appear to confirm the findings from earlier studies. Going beyond traditional family structures – whose members are essential in encouraging initial adoption – can further support older individuals' digital engagement and offer opportunities to learn and gain new perspectives that strong ties alone may not provide. As noted (Choi & DiNitto, 2013; Lee & Kim, 2019), older adults with a larger social network are more likely to receive encouragement to learn to use the Internet as well as emotional and instrumental assistance. Structured learning environments, especially those involving peer or intergenerational interactions, can boost confidence and digital literacy while reducing the fear of making mistakes (Gallistl et al., 2020).

6. Conclusion

This study illustrates how strong ties – characterized by frequent, long-term interactions, mutual trust, and emotional closeness, commonly referred to as bonding social capital – can play a pivotal role in the acquisition of digital capital and the adoption of technological devices. Family support provides not only emotional reassurance but also helps build the confidence needed to use digital technologies effectively. On the one hand, these close relationships create a safe and supportive environment that facilitates learning, alleviates digital anxiety and feelings of inadequacy, and encourages older adults to engage with new technologies. On the other hand, they can also give rise to tensions and dependence, potentially hindering the development of autonomy and weakening digital self-confidence.

This paper also highlights the importance of combining strong and weak ties to support the digital inclusion of older adults. A diverse range of connections and broader networks can help enhance digital skills and expertise beyond what immediate family alone can provide.

While the results of this qualitative study cannot be generalized, it enhances our understanding of intergenerational and social support concerning ICT use among older adults, both positively and negatively. Understanding how various factors intertwine to overcome technological barriers is crucial for developing targeted interventions that bridge the digital divide and promote digital inclusion for aging populations.

Among the targeted interventions that could help close the digital divide and enable older adults to benefit from technology use, the following can be mentioned:

- Implementing intergenerational training programs designed to provide opportunities for younger people to mentor older adults in digital literacy, fostering shared understanding and knowledge exchange.
- Engaging families in digital skill-building activities to strengthen support networks.
- Encouraging community groups and organizations to plan and develop intergenerational workshops that address both technical skills and the emotional barriers to adopting digital technology.
- Designing more user-friendly and accessible technologies tailored to older adults' needs.

Co-creating community-driven digital literacy programs that not only teach ICT skills but also promote emotional independence. Such programs should reassure older adults that making mistakes is a natural and necessary part of learning and that experimenting through trial and error typically involves little or no real risk. To prevent support from fostering dependence, these initiatives should build confidence, encourage autonomy, and promote active engagement with technology

7. Limitations of the study and proposals for future research

This study has some limitations, primarily due to the small sample size and the use of non-probability sampling. The interviews were conducted with a limited group of individuals who were not randomly selected. Additionally, all participants reside in rural areas, which may have affected their access to and familiarity with ICT. Another limitation is the exclusion of adults aged over 80 years. Consequently, the findings have limited generalizability. Future research could address these limitations by conducting similar studies across diverse contexts and populations, including comparisons between urban and rural settings.

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