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Older adults and information and communication technologies: a qualitative interview study on basic psychological needs

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Abstract

In this study, we investigated older adults' experiences and views of using information and communication technology (ICT) from the perspective of the basic psychological needs of autonomy, competence, and relatedness. We collected data from thematic interviews with Finnish older adults aged 57–96 (N = 19). We analyzed the data using theory-driven content analysis, for which self-determination theory provided a theoretical framework and guided the analysis. Our analysis revealed various uses of technologies and several ways that older adults' experiences and views of using ICT reflected the experiences of the basic psychological needs. The results suggest that the basic psychological needs can guide what kind of technology is adopted or not adopted, how, and why. Furthermore, use of ICT can enable and hinder the meeting of the basic psychological needs. The results underline the fact that future ICT should be developed in a way that respects the basic psychological needs.

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Introduction

Information and communication technology (ICT) is an umbrella term for a large set of technologies and resources, such as social networking applications, the internet, cell phones, and computers (Birkland 2019). Many governments and stakeholders have adopted policies to promote the use of technology (OECD 2020). The COVID-19 pandemic has further accelerated the global trends of digitalization and digital transformation (Amankwah-Amoah et al. 2021; United Nations 2021). Finland is among the countries that strongly desires to be one of the forerunners in digitalization of its whole society, including services for older adults (Ministry of Finance 2022). In Finland, internet use has become more common among the oldest age groups. In 2021, the share of those who use the Internet daily or almost daily was 42% among those aged 75–89, and 78% among those aged 65–74 (Statistics of Finland 2021). In reality, in Finland, using many services is virtually impossible without access to and skills to use ICT, which has multifaceted effects on citizens' daily lives and well-being when they are compelled to go virtual. Although many older adults in Finland are active ICT users, many are not, and little is known about the reasons people adopt or discard ICT.

Digital divide is a concept commonly referred to as a gap between those individuals, communities, or societies who have access to and use technology, and those who do not (Van Dijk 2020). After extensive focus on the access to technologies and skills of use (Van Deursen & Van Dijk 2014, 2019), discussions on the digital divide have been shifting toward digital inequalities based on the benefits of use (Scheerder et al. 2017; Van Deursen & Helsper 2015). The digital divide has long been discussed as something to be conquered to prevent people being digitally excluded. Simultaneously, in the previous literature ICT has been presented as a promising device to enhance older adults' psychological and social well-being (Cotten et al. 2022; Fang et al. 2018; Forsman & Nordmyr 2017; Latikka et al. 2021; Simons et al. 2023), but the potential negative effects (e.g. decreases in social contacts)

of technology use and the underlying psychological mechanisms (e.g. technology use conflicting with own values) on older adults' psychological well-being have been less pronounced.

In this qualitative interview study, we investigated older adults' experiences and views of using ICT from the perspective of the basic psychological needs of experiencing autonomy, competence, and relatedness. The goal was to understand potential psychological phenomena related to older adults' use of ICT. Analyzing older adults' technology use from a psychological perspective is important to identify the reasons for technology use and non-use, which in turn can support the development of a digital society in a more fair and sustainable manner. In this study, we applied the self-determination theory (SDT) developed by Deci and Ryan (1985), which offers a novel approach to studying older adults' experiences and views of ICT.

Self-determination theory

SDT is a theoretical framework of human development, motivation, and wellness grounded on empirical work conducted over decades (e.g. Deci 1971; Deci et al. 1982) and later established by Deci and Ryan (1985). One of the sub theories of SDT postulates that people possess three basic psychological needs: autonomy, competence, and relatedness (Ryan & Deci 2017; Vansteenkiste et al. 2020). *Autonomy* is the need to self-regulate one's actions and experiences, is related to feelings of volition and willingness in action and is marked by self-endorsed behaviors and acting in accordance with own goals and values (de Charms 1968; Ryan & Deci 2017). *Competence* depicts the need to feel capable and effective in acting and is related to experiences of opportunities to exercise, express, and expand one's capabilities (Ryan & Deci 2017; White 1959). *Relatedness* is the need to feel connected, involved, significant, and respected among others, and it is often experienced when one cares for others and is cared for in return (Baumeister & Leary 1995; Ryan & Deci 2017). These innate needs are universal, and their satisfaction is fundamental to human wellness and full functioning (Ryan & Deci 2017; Ryan et al. 2021). Need frustration is related to negative outcomes such as maladaptive functioning, pursuit of

need substitutes, and ill-being (Vansteenkiste & Ryan 2013). Low need satisfaction can gradually lead to negative effects over time, whereas active need frustration is likely to accelerate a person's maladaptive functioning and ill-being (Vansteenkiste & Ryan 2013).

Meeting the basic psychological needs can become difficult in older age for instance due to poorer physical health, reduced mobility, or changes in social situation (Clark & Moloney 2020; Ferrand et al. 2014). Research on older adults has however shown that satisfaction of the basic psychological needs is associated with greater psychological adjustment, purpose in life, and personal growth (Ferrand et al. 2014; Martin et al. 2021), and frustration of the basic psychological needs is linked with lower well-being (Ferrand & Martinent 2021). The satisfaction of the basic psychological needs is important for older adults' well-being; however, it is likely that other influential factors exist as well (Ferrand et al. 2014).

SDT predicts that technology's effect on human wellness, motivation, and meaningful engagement is attributable to its effects on autonomy, competence, and relatedness (Ryan & Deci 2019). According to Peters et al. (2018), peoples' willingness to adopt technology to the extent that they are autonomously motivated to do so (i.e. the technology aligns with their goals and values) is influenced by the extent of their anticipated satisfaction of the basic needs. In the adoption sphere – the time prior to use experience – anticipated competence in using the technology is considered important. The role of relatedness may be accentuated as an autonomous motivator (i.e. technology use corresponds to one's goals and values) rather than a sense of relatedness, per se. The motivation to use technologies is related to the extent to which the needs are fulfilled and people sustain engagement with technologies (Peters et al. 2018).

Research applying the SDT framework on older adults' use of ICTs has been sporadic. Dupuy et al. (2016) conducted a field study of SDT-based assisted-living platforms' effects and found that deployment of the system effectively supported older adults' self-determination and technology acceptance. They concluded that self-determination is a determinant of technology acceptance. Clark and Moloney (2020) studied older adults' Facebook use and the fulfillment of the basic psychological needs and found that those who used Facebook frequently tended to report higher relatedness, and those who were less mobile tended to report lower autonomy and more frequent Facebook use. Keenan et al. (2021) studied

qualitative acceptance of telehealth in palliative care among patients and health care professionals, and patients stated that telehealth could satisfy their basic psychological needs whereas the professionals more often discussed telehealth's potential to thwart rather than satisfy such needs, suggesting that such needs' manifestations can vary across subpopulations. Altogether, the studies highlighted the role of the basic psychological needs in ICT acceptance and outcomes from use.

This study contributes to the research on older adults' use of ICT and research on SDT in studies on older adults' well-being. Qualitative interviews provided data on lived experiences and views of using ICT, which we analyzed from the viewpoint of the experiences of the basic psychological needs.

Materials and Method

Participants and Procedure

We collected qualitative thematic interview data from Finnish older adults from November 2021 to May 2022 ($N = 19$). The study targeted older people without cognitive impairment who were living in senior and service houses or nearby in three residential areas in the Tampere region in Finland. We did not set specific exclusion or inclusion criteria for recruitment. From amongst the participants, 15 were female (79.0%) and 4 were male (21.0%), and the age range was 57–96 years (mean 75.3). Most of the study participants lived in a service house ($n = 12$, 63.2%), some lived independently in the nearby area ($n = 5$, 26.3%), and a few lived in a senior house ($n = 2$, 10.5%). Most of the participants were widowed or had lost a partner ($n = 12$, 63.2%); however, some of them had a new relationship. Most of the participants had children ($n = 13$, 68.4%). All study participants lived alone.

We employed convenience sampling and recruited participants in collaboration with a local service house provider. Four members of the research team delivered a presentation on the premises of the service houses about the aims of the research project and compiled a list of participants who were initially interested in participating in the study. They also distributed leaflets about the study in the service houses with the researchers' contact information. We then contacted all initially interested participants via phone to arrange the interviews. Participants were free to choose where and when the interview would take place.

All study participants received oral and written information about the research, their participation's voluntary nature, the safeguarding of anonymity, and the opportunity to withdraw from the study if they desired. Participants also signed an informed-consent form to participate and received a study-data protection report. Before we collected data, the Academic Ethics Committee of the Tampere region in Finland granted ethical approval for the research.

Interview Study Design

We conducted thematic face-to-face interviews in older adults' homes or in the service house premises. The interview addressed older adults' social relationships, perceptions and experiences of their living environment, everyday routines, technologies, and digitalization, as well as ideas for future research. The technology theme was brought forward toward the end of the interview and included questions such as: "How is digitalization visible in your daily live?" "What do you use the internet and technologies for?" and "Is it easy or difficult to use?" The interview did not include direct questions about the basic psychological needs; such experiences were inferred from the interview data instead. The interviews lasted from 31 to 238 min, were audio recorded, and then transcribed. One of the transcriptions covered only parts of the interview due to the recordings' low quality. The first three authors of this paper conducted interviews and analyses.

Analysis Method

We analyzed the data using theory-driven content analysis. Content analysis is a method used for making replicable and valid inferences from interview transcriptions in a social context of interest (Krippendorff 2004). We considered content analysis suitable for our study purposes because it allows for context-sensitive inferring (Bengtsson 2016) and the application of theoretical notions in interpreting the data (Elo & Kyngäs 2008). First, we imported all interview data transcriptions to NVivo software, familiarized ourselves with the data, and applied an initial codebook for the analysis process. Then we reduced the data to material relevant to our research aim. We then deductively coded the transcription material into three

categories based on the basic psychological needs outlined in SDT. Use of ICT was understood to cover adoption and use of technology; therefore, our analysis included material describing participants' experiences and views of ICT and other technology as well as their anticipations of future use or nonuse. ICT was broadly defined to include all technologies older adults referred to as those they used in their daily lives. These included devices such as cell phones, computers, tablets, television, radio, as well as online tools, such as emails, social networking sites (e.g. Facebook) and instant messaging applications (e.g. WhatsApp). The participants did not differentiate between ICT and other technology use.

Results

The analysis showed multiple ways in which descriptions of experiences and views of using ICT reflected the experiences of the basic psychological needs. Next, we analyze the discussions from the point of view of each basic psychological need.

Autonomy

Autonomy was linked with participants' descriptions of willingness to decide on one's use of technology, efforts to self-regulate own use of technology, and remarks about having experienced (external) pressure to use technology.

Participants expressed willingness to decide on their use of technologies. Generally, they described they would use technologies gladly when the use brought joy or provided greater opportunities in life, such as communication with others and managing one's daily affairs:

> "The phone is a really great thing when you have it. … Fortunately, they invented it a long time ago. You can also talk about these things on the phone although it would be really nice to see in-person, of course." (Saara, 96)

Some participants said they reduced or avoided the use of technologies because they were not interested in using them, but preferred to do something else instead, as indicated by Viola, 77: "It is the interest. It's a no, I'd rather knit socks than be on the computer or be on the phone."

Participants described efforts to self-regulate their technology use. Excessive use of technologies (e.g. social media, television) was to be avoided. Over-engagement was prevented by engaging in other activities instead: "I consider myself a tv addict. But from that I have, it was very conscious that I went to voluntary activity, so that I could get away from television for a bit" (Leena, 73). Some participants said social media was also to be avoided due to unwanted content, such as numerous unnecessary notifications and friend requests from strangers. Connecting only with close friends on social media was seen as a way to navigate the newfound online social environment. Some participants did not consider sharing personal matters on social media appropriate and therefore refused to do so: "No, and neither I want to. I don't want to when I think how much people are. I don't need to share my things all over the world. I think it's disgusting" (Hilja, 77).

Participants expressed external pressure to adopt and use technologies, which invoked various reactions. Owning a mobile phone was portrayed as a necessity in society today. A mobile phone was depicted as a key component in maintaining social relationships and to provide a sense of security. However, carrying a mobile phone and using it to answer calls was also portrayed as a duty:

> "Nowadays, it feels like you can't leave your phone at home, for instance. It needs to be with you everywhere. If you go to take out the trash, you take the laundry downstairs to dry, the phone needs to be with [you]. [The] landline phone was so lovely." (Hilja, 77)

Fast societal development increased the pressure to go digital. In general, the participants argued that having nondigital banking options was important because electric services are not accessible or straightforward to everyone. The pressure for everyone to "go digital" evoked uncertainty regarding the future, including potential unequal power relations between human and machine that could threaten human autonomy:

> "I think technology should not go so far that a person lies in a bed and a machine tells [them] what to do. The humanity must not disappear completely [so] that humans are taken care of technically only. It goes too far then." (Sylvi, 76)

The participant's remark is also about the importance of social contacts and receiving care from other people, not just from technology.

Competence

Competence was linked with participants descriptions of their technological competence, perceptions of technology-related support, and worries of losing technological competence in the future.

The participants discussed their technological competence. Those expressing confidence in their technological competence tended to use technology for various purposes and find it useful:

> "It is the easiness with which I write. We have this kind of family WhatsApp, where are my daughters and their husbands and children. There are seven of them. I need to write just one message, and everyone gets it." (Roosa, 79)

Some participants perceived challenges related to use of technology positively. In some of the interviews, participants took the opportunity to express their technological competence by demonstrating their use of technology (e.g. door phone and hearing aid) and explaining the benefits of use. Some stated that the use of technology provided a pleasant challenge in life:

> "You need all the time to challenge yourself, or I at least challenge myself because otherwise, you can't keep up with the times if you are not, and I find it nice. I really like everything that allows me to think a little, fiddle with, and do." (Alma, 68)

However, most participants mentioned their poor technological competence and depicted how incompetence hampered the use of technology and evoked negative feelings, such as fear and anger: "My son takes care of my banking. I have to say that I can't stand [the] computer. … I can be without worrying, I don't need to be afraid that I'll mess something up" (Elsa, 85).

Participants sought technology-related support from family members, technology-related stores, and customer service. Although many perceived support as readily available, it was sometimes perceived as poor quality:

> "To communicate to those, telephone and a chat consultation, they could use a kind of terminology that older customers also understand because it has been several times so that it has broken down to the point that I don't understand what they ask me to do when they used that terminology." (Leena, 73)

Losing one's technological competence with increasing age and possible memory problems was a worry regarding the future. The participants hoped society would understand this difficulty: "So that these www's [websites/virtual environments] are no longer possible for us. And the society thinks that we will preserve the skills, and we won't. I think it is the most important thing that should be included" (Elisa, 86). The participants also expressed their wish for support to maintain technological competence, especially for those interested in receiving it.

Relatedness

Relatedness was linked with participants' descriptions of using technologies for social purposes, preference for human contact over technological contact, and technology inhibiting formation of social connections.

Maintaining social contact with friends and family was a key incentive to use a mobile phone. The participants commonly used mobile phones for voice phone calls, but some also used them for video calls and texting. For some, phone calls were the only way to stay connected with close ones: "The phone is the one through which we keep in touch. I have only one close friend, who lives about 50 km away. That's our only means of communication, the phone" (Hilja, 77).

Some described using online technologies, such as instant message applications (e.g. WhatsApp), social media platforms (e.g. Facebook), and email to interact with other people. Most participants, however, discussed social media to have a limited or no role in their lives. One reason to refuse social media was that some participants fulfilled their need for belonginess offline: "I have these social relationships so abundant here that I don't need it" (Elisa, 86). However, those who described feeling lonely did not emphasize the use of social media but discussed other activities that kept them occupied (e.g. going for a walk, watching television, listening to the radio). Access to the internet was generally depicted as useful in obtaining information for instance about community and social events.

Social interactions with other people also occurred around technology, such as a self-organized television club, hosted by the participant Jaakko, 69. Jaakko used his skills to search movies and other content from the internet to be watched together in the television group. So, Jaakko's competence helped others to reach internet content otherwise unavailable for

them, and the group was able to enjoy the fruits of his skills in social gatherings. One participant described browsing with a tablet and discussing the content as a way to spend time with a family member:

> "When I'm at my sister's place, we watch. She has a kind of a small internet. We watch … all things from there. Let's say she reads a local newspaper from there, and we then look up the things the device contains." (Irma, 72)

Participants discussed the interactions and social connectedness technologies made possible, as well. Some briefly mentioned technology (e.g. radios, phones) provides companionship. Passing time with technology was described to be common in the evenings: "I usually don't go anywhere in the evenings, and that's how I learned to socialize with television" (Leena, 73). One participant who was very unsatisfied with their social relationships and health considered engaging with the radio as a distraction, something else to think about than the pain in her body: "And at night, when it really hurts and I wake up, I come and turn on the radio, and then the pain is a bit forgotten when I try to follow what program is coming on" (Kaija, 78). In this instance, the radio can be interpreted to offer indirect social contact, which can help divert attention from the pain.

Participants emphasized their preference for human contact over technological contact. This tendency was evident in discussions of service situations, in which the human contact was portrayed as worth waiting for: "I'd rather talk to a person face to face, or for example on the phone. … I'd rather be in line so that I can get a friendly aunt to answer" (Roosa, 79). Human contact was preferred because of technology's unnaturalness: "It would be even nicer to talk to a real person. If you ask a chatbot, 'What's up? How are you', some … answered, 'Thank you. What was your question?'" (Ismo, 57). People were considered to need contact with a living being, which technology cannot provide:

> "A person needs the contact of a living person. The machine doesn't replace it. … Even just a dog, when it's a living being, … can improve a person's mental health a lot. But when you place a robot in that corner, if you don't press the button, it won't do anything." (Sylvi, 76)

Participants also stated technologies inhibited the formation of social connections. They often believed other people used technology in wrong or

unexpected ways. Compulsive use of technology was generally portrayed as violating a social norm and hindering the formation of social connections offline. Online difficulties in interpreting other people's words were believed to stem from people's differences in their levels of self-expression: "There [online], people hide behind a certain wall. I am very open to those who I have seen face-to-face. I dare to share things there with my friends. Not all dare to share same things back to me" (Ismo, 57). Some participants also mentioned that sudden changes in other people's ways of using technology (e.g. not replying or constantly looking at a screen) hindered the formation or sustainment of social connections.

Discussion

In this study, we investigated older adults' experiences and views of using ICT from the perspective of the basic psychological needs of experiencing autonomy, competence, and relatedness. We used interview data collected from older adults living in Finland and analyzed it using theory-driven content analysis, for which SDT provided the theoretical framework and guided the analysis. The results offer rich descriptions of older adults' experiences and views of using ICT from the viewpoint of the basic psychological needs and provide insight into possible psychological phenomena related to the use of ICT among older adults.

Our findings regarding autonomy suggest that our participants wanted a chance to make their own decisions regarding the use of technology. They described how they organized their use of ICT by deciding on whether to, when, and how to use it, and they described their efforts to regulate their use of technology by adjusting it to align with their goals and values. Participants expressed external pressure to adopt and use technologies, and fast societal development increased the pressure to go digital. Based on our results, not all looked forward to joining the joyride of digitalization but searched for ways to avoid using technology. We argue that minimized use or nonuse of technology can be seen as manifestations of autonomy. In such cases, refusing to use technology could strengthen the sense of autonomy and the basic psychological need for it. However, at the same time, refusing and not using technology could weaken the feeling of competence due to the nonuse of devices and software. The participants often discussed their interest or noninterest in

using technology with notions of their competence in using technology and social connections with others, which aligns with the SDT framework and highlights the basic needs' interdependent nature (Ryan & Deci 2017).

Our results regarding competence suggest that technological competence is closely intertwined with interest in using technologies as well as perceptions of technology use. The participants often discussed confidence in their technology-related skills with regular use of technology or positive perceptions of use and a lack of competence with limited interest in and use of technology. Lack of competence hindered accomplishments and evoked negative feelings, highlighting the negative reactions to an unfulfilled need (Ryan & Deci 2017). Peters et al. (2018) discussed the difficulty and novelty of technologies in relation to competence and suggested that their importance lies in the extent to which they satisfy competence needs, that is, opportunities for learning and mastery. Our analysis also showed that learning technologies were perceived positively and provide a pleasant challenge in life for some. However, participants expressed concerns regarding ageing, fast technological development, and their future technological competence, and supported the idea of offering technological guidance to all those who wish to receive it. Ageing may bring about advancing health problems with sensory faculties and cognitive abilities, which again may lead to inability to use digital services and devices. Competencies once acquired may be lost, but this fact is not acknowledged when offering digital services for all.

Our findings regarding relatedness suggest that maintaining social contact with friends and family was the key incentive to use a phone. Sometimes, phone calls were the sole method to stay connected with loved ones who resided far away. However, although some participants regularly use social media, most believed it has a limited or no role in their lives. Research has suggested that although they are a promising resource, the role of social networking technologies in fulfilling social needs in older adults' lives is likely moderate compared to how it fulfills younger people's needs (Ten Bruggencate et al. 2019). In line with the assumptions of Peters et al. (2018), in our data, relatedness was emphasized as a motivator to use technology rather than an explicit outcome of technology use. A critical point for relatedness is, indeed, that not all social interactions create social connectedness, and even small details can become influential (Peters et al. 2018), as our findings also showed.

Our participants also stated that technologies inhibited the formation of social connections, which tended to be linked with a belief that others use technology in wrong or unexpected ways. This is an important avenue for future research on underlying mechanisms because use of ICTs (e.g. social media, social robots) has been found to be useful in fulfilling social needs (e.g. Cotten et al. 2022; Latikka et al. 2021), and to have potential negative social consequences for older adults (Ball et al. 2019; Wilson 2018). Some participants preferred human contact over technological contact and stated that technology must not replace human contact. Replacing human contact with technology could threaten human relatedness and therefore needs to be critically considered (Calvo et al. 2020). While our analysis did not systematically focus on age differences in technology experiences, it is noteworthy that, regardless of their own use habits, younger participants may have had a greater variety of ICT experiences due to the more widespread use of technology in their age group (Näsi et al. 2012; Statistics of Finland 2021).

Our study showed that the SDT framework (Ryan & Deci 2017) and the basic psychological needs outlined in it are useful tools also for analyzing older adults' experiences and views of using ICTs. Instead of approaching the topic as use versus nonuse of technology and the needs as unidimensional constructs, our analysis revealed various uses of technology (cf. Van Deursen & Van Dijk 2019) and multiple ways in which the basic psychological needs were related to older adults' experiences and views of using technology. The more nuanced approach is meaningful because focusing merely on the dichotomous counterparts of older adults' use and nonuse of technology may underestimate the complexities, ambivalences, and valuations of digital engagement and disengagement (Choolayil & Putran 2022; Gallistl et al. 2021; Gallistl & Wanka 2022). Our findings generally align with the previous studies in this area (Clark & Moloney 2020; Dupuy et al. 2016; Keenan et al. 2021), to which we add by emphasizing that use of ICT can also have negative consequences regarding the basic psychological needs and thereby undermine older adults' well-being.

The practical implications of our results include that efforts to promote digital inclusion necessitate acknowledgement of the basic psychological needs. It is necessary to advocate voluntary use of technologies or, in the face of external pressure, openly communicate one's intentions and potential outcomes of such use. Quality support related to technology

adoption and use among older adults is important and could be targeted to those who need and are genuinely interested in receiving it. Social belonging is central to human well-being (Baumeister & Leary 1995; Ryan & Deci 2017); therefore; it is crucial to understand its enablers and barriers in technology-mediated environments. From the perspective of motivating older adults to use technologies, the key is to create and maintain need-supportive environments in which people can motivate themselves rather than focusing only on the individual (Ryan & Deci 2017). In technologically advanced countries like Finland, new technological solutions should be introduced gradually, while still providing options for handling everyday matters, such as banking, in non-digital ways.

Study limitations include the fact that we collected our data only in Finland with a relatively small, although acceptable, sample size that consisted of white and mainly female participants. The results are all nuanced descriptions of participants' experiences and views, making them ungeneralizable. We included all interested participants who perceived themselves as older adults, resulting in a broad age range of 57–96 years, challenging the typical definition of older adults being 65 years or older. Only three of the participants were younger than 70 years old. In addition, we succeeded in reaching the oldest old and those residing in service housing ensuring our data represents individuals in diverse life situations. We collected the data during the COVID-19 pandemic, which affected the interviews to some extent; most if not all recommendations for social restrictions were dismantled in Finland, but general caution was still practiced. Finally, the interviews were conducted by three female researchers who were younger than the interviewees, which might have affected the nature of the technology related discussions. In the future, it may be beneficial to explore the topic using peer interviews to examine whether the phenomenon appears similarly. Future studies could also focus on investigating technology use more specifically certain age group among older adults, as well as from a broader life course perspective to better understand how the role of technology experiences cumulates across a lifetime.

Conclusion

Technologies play a nearly ubiquitous role in many societies, and better understanding the psychological phenomena related to the

experiences and views of using ICT is necessary to safeguard peoples' well-being and successfully deploy technologies. Our analyses showed that basic psychological needs play a multifaceted and important role in older adults' experiences and views of using ICT. The results suggest that the basic psychological needs can guide what kind of technology is adopted or not adopted, how, and why. Furthermore, use of ICT can enable and hinder the meeting of basic psychological need and thereby relate to older adults' well-being. If societies focus mainly on closing the digital divide and do not acknowledge that in some cases ICT may hinder the fulfillment of basic psychological needs, we might encounter entirely different challenges in the future. When promoting digital inclusion and deployment of technologies, it is paramount to do so with technology that supports older adults' autonomy, competence, and relatedness to safeguard their well-being. SDT provides a valuable analytical tool for addressing these topics, helping to amplify the voices of older adults in the development of digital society.

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Ethical Approval

The ethics committee of the Tampere region in Finland declared in a 2021 statement that the protocol for this research did not present any ethical issues (Statement 68/2021).

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