

Grazina RAPOLIENE*
Margarita GEDVILAITE-KORDUSIENE**
Vaida TRETJAKOVA***

Barriers of Information and Communication Technologies (ICT): Narratives of Older Users and Their Facilitators

Abstract

As world populations are ageing, more attention is given to the social and digital inclusion of older people. The level of ICT non-use among older adults in Lithuania is significantly higher than in Western European countries. In 2023, 29% of the Lithuanian population aged 65–74 had never used the Internet, while in most Western countries, this share varied between 2 and 8%. Insufficient research efforts in Eastern and Central Europe prompted this study to explore the barriers to ICT use in Lithuania based on qualitative semi-structured interviews with older users (N=36) and their facilitators (N=9). The difficulties revealed by the study are divided into three groups. First, the participants found it difficult to adjust to the technologies as a unique system (to understand its specific principles of functioning, to deal with information on English and technical language). Second, their psychological relationship with the unknown and complex subject have caused some problems, as they faced a spectrum of fears, insecurity, the shame of not knowing, the experience of one's limitations, lack of patience. Third, changes that informants relate to old age like diminishing motivation to engage with innovations, learning difficulties, and bodily changes (sensitivity of fingers, weakening sight and memory) constituted additional barriers for older ICT users. To overcome the barriers, access to mentoring and consulting would be beneficial.

Keywords: older people, information and communication technologies (ICT), Internet, barriers

Introduction

As European and world populations are ageing, more attention is given to the social inclusion of older people, particularly concerning digital technology use. The level of ICT non-use among older adults in Lithuania is significantly higher than in Western and Northern European countries (Lamura et al., 2018). In Lithuania, 29% of the population aged 65–74 have never used the Internet, while in most Northern and Western European countries, this share varies between 2 and 8% (EUROSTAT, 2023). Older people in Lithuania are among the

* Lithuanian Centre for Social Sciences, grazina.rapoliene@lcss.lt Orcid: 0000-0003-0125-3328

** Lithuanian Centre for Social Sciences, margarita.gedvilaite@lcss.lt Orcid: 0000-0001-7691-1490

*** Lithuanian Centre for Social Sciences, vaida.tretjakova@lcss.lt

most technologically excluded (in addition to the unemployed and rural residents), experiencing digital exclusion at all levels (Šuminas et al., 2018). The situation is far from optimal despite many practical initiatives targeting older people, for example, “Use IT and Enjoy“ or digital literacy courses in public libraries. Therefore, as increasingly more areas of public life move to the virtual sphere (access to bank accounts, public services, including health care, shopping etc.), technological illiteracy contributes to social exclusion in old age. It became more obvious during the COVID-19 pandemic, which for some worked as a driver for starting to use ICT. Before the pandemic, 53% of the population aged 65–74 never used the Internet (EUROSTAT, 2019). Older people, whose social networks are shrinking because of objective reasons like the exit from the labour market or death of relatives, are at an increased risk of becoming severely ill and having to practice physical distancing, consequently becoming even more excluded from social life. While other age groups and areas of public life rapidly shifted their activities to virtual space, thus compensating also for the lack of social contact, older people who did not use modern technology experienced even deeper isolation. What are known barriers for older people to learn and use digital technologies?

Most common barriers to ICT use in old age

Initially, in the 1980s and 1990s, research focused on socio-demographic factors influencing differences in computer and Internet access. Income, age, gender, and race were found to influence the likelihood of being online. Thus, everyone’s access to hardware and the Internet was seen as a solution to the problem (Van Dijk & Hacker, 2003). Later, the notion of the digital divide was complemented, showing that the access gap is fourfold, including mental and material aspects, skills and differences in the use (Van Dijk & Hacker, 2003). Mental (emotional and psychological) gaps stem from individuals’ lack of experience with the ICT, which might be expressed in the lack of interest in or even hostility to the ICT. The material gap refers to a simple lack of access to technologies. The gap in digital skills addresses the differences in the levels of experience, and people with little ICT experience might not find computers user-friendly. The use gap refers to the differences in use patterns; for example, skilful, experienced users might use the Internet to increase their capital (search for jobs or expand social networks), whereas others might simply watch videos (Van Dijk & Hacker, 2003; Davison & Cotten, 2003, 2009).

Age was found to be a stronger predictor of ICT use than race, gender, and other socio-demographic factors of digital inequalities (Davison & Cotten, 2009; Cotten et al., 2011). Compared to younger people, older adults are less likely to adopt digital technologies and tend to cease using them with age (Berkowsky et al., 2018; Matthews et al., 2019; Yoon et al., 2020). People aged 65–74 use ICT more often than those aged 75 and older (Crouch & Gordon, 2019; Vulpe & Crăciun, 2020). Compared with younger adults, older people use fewer types of technology for a more limited range of activities (Olson et al., 2011) and report concerns about using social media (Hope et al., 2014; Jung et al., 2017). Nevertheless, studies also revealed that the influence of age on the experience of using computers is mediated by socio-economic variables (Fernández-Ardèvol & Ivan, 2015). The levels of education and urbanization, and gender were found to be stronger determinants of Internet use than age and health (Gallistl et al., 2020). Age as a predictor of ICT use might be more related to the men-

tal gap (attitudes, motivation, perceived relevance of ICT use or computer anxiety) than to the material access gap (Conci et al., 2009; Cotten et al., 2011, 2016; Goher et al., 2017).

Attitudes towards computers, in general, are more positive among younger cohorts (Pruchno, 2019). Technological anxiety, manifesting itself as apprehension, nervousness, and general discomfort (Gelbrich & Sattler, 2014), is seen as one of the main barriers for older ICT users (Knowles & Hanson, 2018; Guner & Acarturk, 2020). Ivan and Cutler (2021) emphasize the danger of perpetuating stereotypes that label older individuals as technophobic and unwilling or unable to embrace new technologies. Acknowledging these internalized stereotypes is crucial for a more nuanced understanding of the barriers faced by older adults in the digital realm.

Research suggests that ageism also influences technology adoption: people experiencing ageism are less willing to use the Internet, perceiving it as unhelpful rather than beneficial for older people and finding it more difficult to use (Choi et al., 2020; Yazdani-Darki et al., 2020; Mariano et al., 2021). Although willingness to use technology has been revealed (Betts et al., 2017), the use costs are often perceived as outweighing the benefits (Sayago et al., 2011). There are fears of damaging equipment, leaking personal data (Hill et al., 2015; Wilson et al., 2023), inappropriate advice and interactions that breach trust (Michie et al., 2017). Lower educational level and socio-economic status, lack of skills (Hargittai et al., 2019; Matthews et al., 2019) and exposure to technology earlier in life are also listed among factors of digital exclusion in older age (Francis et al., 2019; Neves & Vetere, 2019; Crouch & Gordon, 2019; Vulpe & Crăciun, 2020).

In addition, health status and disability are among the factors influencing digital inequalities (Yu et al., 2016; Matthews et al., 2019). The literature mentions the design of devices as failing to meet older people's physical and cognitive needs (Vulpe & Crăciun, 2020), especially small buttons and small screen text (Wilson et al., 2023).

Thus, it seems that complex of socio-demographic, socio-economic, and cultural factors play a role in the process of adaptation of digital technology. Critical studies, however, highlight that the design of technology inherently fosters exclusion. Ivan and Cutler (2021) underscore the concept of a self-fulfilling prophecy, contending that technology, predominantly crafted by younger individuals with a focus on the youth market, results in prototypes that pose greater challenges for older users. Additionally, algorithms frequently fall short in predicting the habits, interests, and values of the older demographic (Rosales & Fernández-Ardévol, 2019). Moreover, critical studies also problematize some common definitions that try to capture different relationships with technology among generations. According to Ivan and Cutler (2021), perception of older people as digital immigrants, hesitant to embrace technology, is an oversimplified perspective that can reinforce ageism. It is important to recognize that older individuals not only express the willingness to integrate technology into their lives but may also exhibit technology use patterns similar to those of other age groups.

Even though we have some knowledge on the barriers to use ICT in older age, most research was carried out in the Western Europe and the U.S. Studies from Eastern and Central Europe, especially qualitative ones, are lacking. Thus, this study aimed to explore the difficulties experienced by older ICT users in Lithuania based on qualitative semi-structured interviews with older ICT users (N=36) and their facilitators (N=9). We raised the question what obstacles the older ICT user must overcome from their perspective, complementing with the view of their facilitators, and which of them might be related to socio-cultural context of Lithuania.

Methods

Recruitment

Variations in socio-demographic characteristics were sought to assure the sample diversity: gender, age (65–74 and 75+), level of education, health status, place of residence (city, mid-size town and rural area), and belonging to ethnic minorities. Interviewees were recruited with the help of interviewers' social networks, social media (including groups of active seniors), NGOs of older people (like the broadly nationally distributed Third Age University), and snowball sampling. The interviews were conducted in April–September 2022 in Lithuanian (except for one in Russian). As the fieldwork took place during the post COVID-19 pandemic period, and our target group was the most vulnerable to the infection, potential participants were invited to give interviews in person or remotely (online or by phone), depending on their preferences. Most interviews took place remotely, using Zoom, Facebook Messenger, Skype, and telephone, except for three cases in person. All interviews were recorded and transcribed.

Remote techniques of data collection have been employed for some time in qualitative research, through telephone and different online communications software. Even though face-to-face interviews are considered to be superior, it has been proven that remote interviewing can also result in good quality data, and even be more advantageous in certain cases. It offers more flexibility in terms of interviewees' geographical location (Cachia & Millward, 2011; Cater, 2011), facilitates the inclusion of marginalized groups, that might not be accessible otherwise (Douedari et al., 2021) and is more cost-effective. In terms of data content, remote interviews might lead to richer verbal descriptions on the interviewee's part as the non-verbal aspect of the communication is missing (Holt, 2010). In our case, we did not encounter any discrepancy between the richness of information in remote interviews and the few that took place face-to-face. In line with other research (Gray et al., 2020; Khan & MacEachen, 2022; Korpela et al., 2023), we did not observe any data quality issues that would be related to remote way of interviewing, and we support the view that it is a secure, accessible, and cost-effective means of data collection.

The study was conducted in line with the fundamental ethical principles of anonymity, privacy, and confidentiality and approved by the Compliance with Research Ethics Committee of the Lithuanian Centre of Social Sciences (No 1G-2(1G) 2022-01-26). Before participating in the study, all informants gave their verbal informed consent after receiving detailed information about the study, which was included in audio records. Informants were assured of personal information confidentiality, interview data anonymity and the right not to answer questions and/or quit the interview at any time.

Sample

In total, 36 semi-structured interviews were conducted with older ICT users (aged 65-91 years) and nine with their facilitators. The heterogeneity of the sample of older ICT users was not optimal, as most participants were women (26) with university education (31), living in cities (27), and using ICT for seven years or longer (31). Concerning informants' age, area of education and mastery in ICT use, the sample was better balanced. The sample also included three representatives of ethnic minorities and one person with a formally recognised disability. Socio-demographic characteristics of the older ICT users are provided in Table 1.

Table 1. Sociodemographic characteristics of participants, older ICT users (N=36)

| | N |
|-----------------------------|----|
| Gender | |
| Female | 26 |
| Male | 10 |
| Age | |
| 65–74 | 22 |
| 75+ | 14 |
| Education | |
| Primary | 0 |
| Secondary | 1 |
| Professional | 4 |
| University | 31 |
| Area ^a | |
| Humanities | 11 |
| Social Sciences | 9 |
| Natural Sciences | 17 |
| Ethnicity | |
| Lithuanian | 33 |
| Russian | 3 |
| Place of residence | |
| City | 27 |
| Mid-sized town | 3 |
| Rural area | 6 |
| Duration of ICT use | |
| Up to 2 years | 0 |
| 3–6 years | 5 |
| 7 years or more | 31 |
| Number of used applications | |
| 1–2 applications | 1 |
| 3–4 applications | 13 |
| 5 applications and more | 22 |

^a One study participant has two university degrees: in social sciences and humanities.

Our sample is consistent with the demographic characteristics of older ICT users (60+) in Lithuania: 68% of them are women, 34% with tertiary education, 71% from five main cities' counties' (ESS ERIC, 2023; 2020 data, author's calculations). From the European Social Sur-

vey, we also know that 64% of older internet users use it most days or daily, 9% – a few times a week, and 27% – only occasionally. In terms of types of access to the Internet, 91% have access to the Internet at home, 19% at work, 22% on the move, and 23% at some other place (such as café or a friend's house). This is in stark contrast to older individuals, who don't use the Internet – only 16% of them have indicated that they could access the Internet if they wanted to at home, and none of them had access in other places (ESS ERIC, 2023; 2020 data, author's calculations).

Table 2. Sociodemographic characteristics of facilitators (N=9)

| | N |
|--------------------------------------|---|
| Gender | |
| Female | 4 |
| Male | 5 |
| Age | |
| 30-39 | 3 |
| 40-49 | 4 |
| 50-59 | 2 |
| Relationship with the older ICT user | |
| Daughter | 3 |
| Son | 5 |
| Granddaughter | 1 |
| Education | |
| Primary | 0 |
| Secondary | 0 |
| Professional | 2 |
| University | 7 |
| Area | |
| Humanities and Arts | 3 |
| Social Sciences | 2 |
| Natural Sciences | 4 |
| Ethnicity | |
| Lithuanian | 9 |
| Place of residence | |
| City | 6 |
| Mid-sized town | 1 |
| Rural area | 0 |
| Abroad | 2 |

The facilitators were interviewed to complement the picture. These were people identified by the informants as providing the most support with ICT use, i.e., their children and one granddaughter. The sample of facilitators consists of four women and five men, aged 30-56, two with professional education and seven with university degree, six living in cities, one - in mid-size town, and two – abroad, all Lithuanians. Socio-demographic characteristics of the facilitators are provided in Table 2. We collected less interviews with facilitators than intended, due to different reasons. Three identified facilitators did not agree to give an interview. In six cases it was said that many people provide little help occasionally (children, children in law, grandchildren, neighbours, friends), and the older ICT user could not identify one person as a facilitator. Some older ICT users acted as gatekeepers and were hesitant to ask the facilitator for an interview, not wanting them to be disturbed. In the sample of older ICT users were two IT programmers who did not need any help, three participants learnt ICT use at work, four - by themselves, one – in a course, one user mentioned finding solutions on internet, and one – looking for help in a telecommunication company.

Procedure

The interviews were carried out by three experienced interviewers. For the sample of older ICT users, they took 20 hours in total (0.56 hours on average). Interviews started with a general question about the beginning of ICT use, complemented with questions about usually used devices (a computer, smartphone, computer tablet etc.), software programs and applications known and used often, habits of ICT use, preferences, the effect of the pandemic etc. For this article, the most important material was collected, asking about difficulties faced initially and currently, also from the facilitators' perspective. Interviews with facilitators were shorter, up to 20 min.

Thematic analysis

Inductive thematic analysis was applied in this study. All interviews were read several times and coded inductively by three researchers with the help of the MAXQDA 2020 software so that each interview was coded into small units of meaning by one researcher and afterwards checked by another. After the initial coding, the main themes were identified, and the excerpts were selected based on their relevance for the analysis. Next, codes were refined and grouped into larger themes by grouping and regrouping them to represent larger units of meaning (Miles et al., 2014). The coding process moved from initial descriptive codes (e.g., sight problems) to more interpretative codes (e.g., bodily changes). For this article, we used data coded as “Difficulties in the beginning”, “Difficulties now”, “Difficulties for users from facilitators perspective”, and “What would facilitate involvement” with their subcodes. Excerpts of the interviews used in the article were translated into English (and translations mutually corrected) by the three researchers. Before submission, the translation of excerpts was corrected by a professional interpreter.

Findings of the empirical study

The difficulties experienced by the study participants can be divided into three groups. First, they found it difficult to adjust to the digital technologies as a unique system (to understand spe-

cific principles of ICT functioning, to deal with information on English and technical language). Second, their psychological relationship with an unknown and complex subject have caused some problems, as they faced a spectrum of fears, insecurity, the shame of not knowing, the experience of one's limitations, lack of patience. And third, changes that informants related to old age like diminishing motivation to engage with innovations, experienced learning difficulties, and bodily changes (sensitivity of fingers, weakening sight and memory) constituted additional barriers for older ICT users. We will discuss them in detail below. In this study, ICT means digital equipment (computers, tablets, smartphones) with an Internet connection.

Digital technologies as a distinctive system

Older ICT users remember the very beginning of using computers as especially challenging. People had to adjust to completely new things, like typing (instead of using typewriters or typist, 4WI¹, 3WII), coordinating moves of the cursor (7WI), using the mouse (4WI, 32WII, 5_son, 9_son) or touching/swiping the screen (24_grand-daughter, 25_son, 26_daughter, 28_son, 35_son). For some, games were a good solution to get used to the computer and develop new skills (4WI, 9_son). To become a competent user, one must become familiar with “computer logic”, for example, selecting the right keywords for Google search (25_son) or recognise such common technical signs as “on/off”, “play”, “pause”, “magnifying glass” for “find” (26_daughter), which is not self-evident for beginners. They remember the very beginning as especially difficult to understand (12WI, 32WII, 33WII) and time-consuming (“*And anyway, do you imagine how much time one had to spend to begin to understand?*” 2WII; 9WI). The hopelessness of such situations, when they felt left on their own, is well illustrated in the story of a lady who was the first person in her institution to learn how to use a computer, who benefitted from her teenage son's mentoring and later provided an informal tutorial for beginners like her:

I've got a very, very used computer. My teenage son came for three half days. He conducted some kind of training for me, and I started completely, completely like that on my own. Then I even wrote a kind of instruction for particularly dumb people, as I called them, because at that time it was even important whether to turn off [the computer] first or to press certain buttons here first. After that, my friend, who is also mostly self-taught, said very good instructions because they're written by someone who is self-taught. <...> It wasn't easy, it wasn't easy. (9WI)

An enormous barrier relevant for most, if not all, older ICT users is *the lack of English knowledge*. In the Soviet educational system, older generations, besides learning Russian, studied either German, French or English but had no possibility to practice.; tThus, the knowledge of foreign languages was either formal or vanished.

The only problem is that I don't know English. Well, how much of it, I don't know? I have some understanding. A little, but very little. But if you need to read something, I can read a little. It's difficult, of course, when I don't know English (11WI; similarly expressed in 13WI, 17WI, 21WI, 22WI, 24WII, 25WII, 27WII, 29MII).

Even those with a university education who knew English formally no longer have the knowledge. Beyond the Iron Curtain, it was neither used nor needed, and this is most likely typical for the whole post-soviet region.

In the year 64 of the past century, I passed the English language exam. (5MII)

Although we kind of studied at the university, although very little... For a couple of years, maybe I don't remember at all whether there was a foreign language taught in economics. (2WII; similarly expressed also by 3WII)

Now, they acknowledge the urgent need to know English (*“And now without English — nowhere”*, 29MII), naming this disadvantage *“the huge brake (hindrance) for our generation”* (2WII). Unfortunately, even if attending a formal language course, learning English now seems insufficient (*“I attended courses for maybe three years. I learned a little English, but of course, you still don't know it ideally”*, 19MI).

Even dictionaries and self-help books are of little use, as the language used in the ICT field is highly *technical*, full of specific terms (6WI, 34MI) with a technical meaning that is different from that used in everyday language, i.e., “cloud” (34MI, 35MII). Older ICT users deal with language problems simply by guessing, deciphering symbols, or trying blindly (5MII, 31WII).

In some cases, such activities result in additional costs, such as a strange subscription taking a monthly fee of two euros, which is impossible to cancel even for specialists from the mobile phone company (4WI). Even for advanced users, ICT systems remain largely “unknown” and full of surprises.

And with computers, even to this day, there are such things that sometimes you don't even know why it happened and why something didn't turn on. But it seems another person comes along, shakes something, clicks, and it's back to work. These kinds of crazy situations sometimes happen to this day. (7WI)

Some users complain about missing instructions about how to use different smartphones (12WI), constant renewal and change of applications (15WI, 35_son), particular applications (e-health, centre of registers) as user-unfriendly or unsatisfying (21WI, 29MII), unclear, insufficient or potentially unsafe messages (2WII, 24_grand-daughter, 31WII, 34MI, 35_son), popads (34MI), stream of false, unreliable information (34MI), unclear functioning, for example, when a phone call interrupts an ongoing Viber call or difficulties adding a note to a picture in Viber (34MI). One lady was worried about the general insecurity of electronic communication: she asked to duplicate all the invoices by sending her copies via regular mail (33WII).

In summary, ICT constitutes a unique area of life characterised by an unknown language and specific functioning; thus, it is very difficult to adjust to it, even for those older people who have worked in related areas (engineers, mathematicians, programmers). The study participants mentioned that they missed help and mentoring (2WII, also 21WI) because they lived alone (33WII) or their children were busy (12WI, 17WI, 28MI, 34MI). They also wanted to understand the logic behind the action and not simply know what key to press (34MI). In terms of formal introductory courses, participants mentioned long waiting periods (22WI), dissatisfaction due to unstructured information, poorly formed groups (5MII) and different newer software (31WII).

Psychological issues facing the unknown

How do older people feel encountering the unknown? Besides learning to use technology, a person must deal with a mixture of feelings. First, there is fear, i.e., a fear of new unclear things (12WI), potential security issues (2WII, 31WII, 35MII), not knowing or not

understanding how to use smartphones, which stops people from buying them (10WI, 12WI). While using a device, there is a fear of making mistakes (10WI), making “everything disappear”, not knowing “how to open it again” (25WII) or losing “everything that one tried to do” (9WI, also 26_daughter). There is also the shame of not knowing “elementary things of the keyboard” (20WI), lack of patience until you get things functioning (2WII), and shyness to start playing online games (35_son). Some participants dislike novelties, are less adaptive to technologies (3WII), and experience stress and fear while using them, limiting their ICT activities to only the necessary ones (12WI). Actual mistakes, like the unwanted subscription mentioned above and payment from a wrong account (10WI), contribute to the fear.

One participant shared about her persistent hostility/aversion towards computers: for years, she avoided work positions with the computer skills requirement (in UK and Lithuania), resisted encouragements of colleagues to go to work in an office instead of conveyor work, arguing it was not suitable for her because she lacked patience. She expressed no will to sit in front of a computer for an entire day as it caused her tiredness and tension in her head. Finally, she was forced to use a PC when her workplace was computerised (26WI). From her facilitator’s perspective, the difficulty was in facing limitations, i.e., “*when it seems to be difficult, then that becomes unnecessary*” (26_daughter).

For her, when we talked remotely, she got terribly angry. It seemed impossible for her. Well, how can I say, she found it very difficult. ‘If I had known that it would be computerised here, I would not have come then’. As if it was something terribly difficult to learn. I think it’s a matter of time and practice. Nothing terribly complicated, in any way, adapted to be convenient. Still, [better] than writing in ledgers. She finds new things challenging. But this is her personal issue because she has a hard time facing her limitations. And then, she finds it is better not to do and not see that she has that limitation than to try. <...> Well, she likes to know, and she likes to teach others, but if she finds out that she doesn’t know, then... (26_daughter)

Similarly, only to a much lesser extent, other participants explained that they “do not need” to learn how to use particular applications, for example, online banking, even if they had already considered it for a while (5MII, 5_son), or there is no need to learn it when others (spouse, child) do it for them (10WI, 22WI, 15WI, 5_son). They explained preferring to walk to a bank office or shop (5MII). Adjusting to ICT has some thresholds from very easy basic use, like browsing news portals and watching videos, photographing, using Messenger or Viber, communicating in social media, using social services, such as online banking, shopping, or e-health, and using walking apps etc. People stop learning new things at any stage, probably considering that assumed efforts (or risks in the case of banking or shopping online) are bigger than expected benefits. Such findings align with the uses and gratifications approach, explaining that individuals use communication technologies, among other resources in their environment, to satisfy their needs and achieve their goals (Katz et al., 1973). If the assumed goals are not satisfactory or the efforts evaluated are higher than gratification, the choice to stop using certain functions or programs is made.

Old age: decreased motivation, learning abilities and bodily changes

In some cases, “no need” means more than a simple lack of interest in new applications: it is about the lack of vitality, the wish to live and the internal preparation for the approaching death.

And I see that if I sit down now and start studying those programs hard, I won't have any use or need for them. Well, in general, you understand, there emerge some kind of depressive [attitude]... Well, I don't want to do anything new. What was done has already been done. And now it's just to save yourself for what is left. (36MII)

The topics of old age, *decreased motivation*, and a wish to engage with new things also emerged in other interviews (3WII, 27WII).

Perhaps I also feel it as a kind of indicator of age. Let's say I haven't tamed Whatsapp, I'm not good at taming Viber either. It's like I tried, but something didn't ring, I didn't hear, I didn't answer. The person waited; got offended. Why that phone didn't ring, I can't... I can't figure out why it didn't ring. Was it disconnected from the Internet? And these things seem to me already somehow too difficult. I don't want to solve these problems anymore because they seem to me like something extra, extra unnecessary... Well, why do I need all this? But there is such a thing that I probably would have studied in my youth and found out why it is the way it is and not otherwise and tried all the possibilities because I liked to do that. <...> And now I kind of don't want this anymore. I just felt that it's like an ocean where I still won't cover everything; one just has to choose something that's just convenient, something that's easy to remember and is clear. (7WI)

Notably, technologies are not easy to learn; their functions and design are intended for standardised bodies, without having older people in mind (Hanson, 2010; Neves & Mead, 2021) or their difficulties that can easily be attributed to old-age-related unskillfulness. This may support self-ageism. Participants relate old age with *bodily changes* like decreased sensitivity of fingers, trembling hands, difficulties handling items, clumsiness, and dropping a phone when hurrying (24WII, also 17WI, 32WII). In relation to ICT use, the most disturbing is weakening sight. A small screen and letters prevent older people from using a phone or limit its use time (15WI, 10WI, 6WI, 29MII, 32WII). Nevertheless, some respondents said they have gotten used to it (11WI). Even bigger letters in the phone sometimes are insufficient, requiring a magnifier (24WII). Application promoters are not always aware of old-age sight problems:

Terribly insistently suggested some new program. And as they showed it, there was a black background with white letters. Is this for an old person to read in white letters on a black background? (15WI)

Participants stressed that with age, *learning* becomes increasingly difficult and requires much more effort (9WI, 21WI) compared with their abilities in the youth (2WII) or with the abilities of younger people learning together (10WI). They are either joyful about having started to learn significantly younger and "have learned everything needed" (22WI, also 12WI) or regretful of not having started earlier (24WII, 31WII). Notably, "older age" in the ICT learning context can be relatively young, i.e., just over 45 years (10WI). Study participants mentioned weakening memory (10WI, 17WI).

The past living circumstances of older generations are seen both as limiting and explaining the inability to learn the use of ICT.

It's just that you also need to look at the capabilities of the elderly people and consider them. Understand that people may lose the opportunity to work, to use those Internet possibilities and the computer. I know some people who can't understand anything about what a computer is and how to work with it. There are such people. They say, I look at that computer, and I don't understand how to deal with it. Where to press what. They can't learn. Young people must take this into account somehow. We didn't learn anything at school. There were no computers back then... Only a TV set, and even then, not everyone had it. (16WI)

The excerpt above resonates with the criticism towards the individualised approach of widely employed behavioural technology acceptance models (TAMs), stressing that the impact of diverse social and technical contexts should be considered (Neves et al., 2018). The Senior Technology Acceptance and Adoption Model (STAM, Renaud & Van Biljon, 2008), including the “user context”, should be applied instead (Neves & Mead, 2021).

Discussion and conclusions

This study aimed to discover the difficulties experienced by older ICT users in Lithuania. The discovered difficulties were grouped into ICT aspects as a unique system, respective psychological issues emerging while dealing with the system, and changes related by the informants to their older age. Interestingly, the barriers related to *the distinct logic of the ICT system, its jargon and the English language*, which were mostly expressed by the informants, are not included in the gaps of the digital divide (Van Dijk & Hacker, 2003). However, the relevance of this issue is also demonstrated by other studies, i.e., even for native English speakers, the technical ICT jargon creates some difficulties along with the perceived complexity of the technology (Hill et al., 2015; Neves & Mead, 2021). Older people expressed the need for a manual written in the so-called dummy style (Vaportzis et al., 2017; Ivan & Mocanu, 2020). The lack of English language knowledge might be one of the main barriers for older ICT users in Eastern and Central Europe, as similarly revealed by a study from Iran (Navabi et al., 2016).

This study confirmed the importance of *psychological* aspects (mental gap). It is in line with previous research stressing the role of self-efficacy. A greater sense of self-efficacy is associated with more intense use of technology and the Internet (Eastin & LaRose, 2000; Karavidas et al., 2005; Lam & Lee, 2006; Lüders & Brandtzæg, 2017), as older people tend to present lower levels of confidence about the ICT use and underestimate their computer skills (Marquíe et al., 2002; Broady et al., 2010; Hill et al., 2015). It also resonates with previous findings about the lack of technological security (Hill et al., 2015; Wilson et al., 2023), either due to the lack of knowledge or of the fear of the unknown (Gatti et al., 2017). Looking to the future, the importance of psychological aspects will remain the same or increase, as according to Barnard and collaborators (2013), ICT use will be the most intense when the experience extends beyond functionality and acceptance to an emotional response.

The group of difficulties which informants related *to old age* was relatively smaller and less influential than one could expect from literature review. These difficulties can be partly attributed to the mental gap (diminishing motivation and the ability to learn, which can be intertwined with internalised ageist assumptions about ageing and technology) (Czaja et al., 2006; Mitzner et al., 2008; Neves & Mead, 2021). In the data of this study, ageist attitudes were not very explicit but rather limited to a simple mention of “old age” as causing difficulties in the use of ICT. But they might be another factor influencing the digital divide in old age in Eastern and Central Europe since ageism is more prevalent in this region than in Western Europe (Rapoliene, 2015). The third group also included difficulties faced by older people due to bodily changes, which still had insufficient attention from the computer developers (Hanson, 2010; Vulpe & Crăciun, 2020; Neves & Mead, 2021) and theoreticians of the digital divide.

Compared to other studies, the sample of this study had less expressed *anxiety or fear of damaging expensive equipment* (Hill et al., 2015). In the beginning, many informants of this

study got old used computers and phones from their children. Some older users were very advanced and bought devices corresponding to their needs. The opportunity to “learn and experience before you buy” (Betts et al., 2017) or economic costs in the sense of expensive, unaffordable equipment included in the Technology Acceptance Model (Martín-García et al., 2022) did not appear as a barrier in this study, either.

Discussions of this aspect with colleagues from Western countries revealed an opinion that giving old equipment to older people was a manifestation of ageist behaviour. It was not perceived as such by the study participants. Cost-saving behaviour and positive attitudes to second-hand use of items are natural for older generations in Eastern and Central Europe (see Rulikova, 2020, for a comparison of attitudes of older consumers in the Czech Republic), who survived the post-war period and spent the major part of their lives in the economics of deficit. In some cases of this study, people who could easily afford new smartphones were using old ones handed down from their children. But for older people in Eastern and Central Europe, access to a device, either new (due to the lack of funds) or old (having no children or younger relatives or children having no functioning old computers), may still be the barrier, i.e., the material gap of the digital divide may be still relevant.

Since interviews targeted ICT users, the benefits of ICT and the Internet were not questioned. On the contrary, they were seen as one of the most important motivations to overcome the barriers faced. However, despite our efforts to ensure variability in participants' demographic characteristics, the sample was skewed toward women, better-educated individuals in large cities with longer ICT usage. The sample largely reflected typical features of frequent technology users: higher levels of interest in technology, greater self-efficacy for technology, better health, (relatively) higher income and cognitive abilities (Wagner et al., 2010). Nevertheless, the stories support the suggestion of other researchers (Hill et al., 2015; Martín-García et al., 2022) to overcome technological anxiety and decrease the perception of difficulty by introducing the usefulness of ICT during training. Older adults who perceive social networking websites as easy to use and useful are more likely to use them (Braun, 2013). As previous research (Betts et al., 2017) revealed, personalised mentoring and access to consultations after training are the best ways to facilitate and support the use of digital technologies, which was also expressed by participants in this study as the most desirable help.

In terms of other limitations of this study, we faced challenges in recruiting facilitators mentioned above. Additionally, the qualitative nature of the study limits its generalizability, as findings are context-dependent and may not be universally applicable. It would be also beneficial for the future research to investigate barriers to ICT use that were not overcome, i.e. to study the older non-users.

Declaration of Conflicting Interest

The Authors declare that there is no conflict of interest.

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Note

¹ All study participants, older ICT users, were given codes consisting of numerals (1–36) referring to the number of the interview, letters (W = women, M = men), and the age group of the informant: I —65–74 y. o., II — 75+ y. o. In the case of an interview with their facilitator, the number of the interview with the older ICT user is complemented with either “son”, “daughter” or “grand-daughter” marking their relationship with the older ICT user.

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