

Internet use among older people in the context of Senior Technology Acceptance Model (STAM)

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Abstract

There are few studies on practices and barriers of Internet use among older people in developing countries. This research identifies the main strategies of Internet use among older people and the determinants and barriers that influence these strategies in a developing country (using Russia as a case study). The empirical basis for the research is semi-structured interviews with people aged 60 and over living in Russian cities (n=40) and questionnaire survey (N=210). The questionnaire serves to triangulate data and demonstrates that the pandemic has increased the number of Internet and digital service users, with 44% of respondents noting the growing usefulness and convenience of electronic services. Using the elements of the Senior Technology Acceptance Model (STAM), we identify the determinants that influence how and why an older person starts to use the Internet, as well as define the barriers to bridging the digital divide. Based on the results of the research, we have identified four strategies of Internet use: consumption of information and entertainment; communication; use of Internet resources; refusal. In practice, users tend to combine the first three strategies. The stages from objectification (intention to use) to conversion (making the final decision to use in the future) depend on the type of Internet resource: in the case of communication and information consumption, the acceptance comes quickly, in contrast to more specialized Internet services and applications. The key

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determinants influencing the choice of a strategy are age, professional activities and their nature, social environment and family, and ownership of a smartphone (as a simpler and faster device compared to a personal computer).

Keywords

Older people, Internet, social networks, digital divide, Senior Technology Acceptance Model (STAM).

Introduction

The story of introducing new technologies to older people is always a story of challenge and development (Latour, 1993). Earlier studies point to the positive contribution of new technologies to improving the quality of life among older people. Information and communication technologies (ICTs) solve the problem of isolation, expand opportunities for contact, and create a special comfortable environment for communication and interaction among older people (Czaja, 1993; White, 1999; Kanayama, 2003). Learning new technologies, computers in particular, was seen as an entirely positive experience leading to an improvement in self-esteem and self-confidence. Furthermore, the use of new technologies contributed to overcoming social exclusion of older people, facilitating their involvement and integration into social life and providing them with a variety of leisure and professional activities (Morris, 1994; Chu, 2022). Such a positive view of the development and application of new technologies prevalent in the earlier studies did not include reflection on the practices and purposes of older people using these technologies in their lives, which was considered later.

From the point of view of modern domestic and foreign authors, social exclusion in the modern information and communication society can be associated with the lack or low level of skills that determine the inclusion of older people in society, including ICT skills (Vidyasova, 2018; Olsson et. al, 2019). Older people tend to have more limited access to and use of ICTs than other social groups. Some scholars attribute this to the fact that ICT literacy is not like traditional literacy; there is a constant need to learn new things; interfaces and applications are constantly changing. Recent Western research confirms the positive impact of education, material resources and social connections on the ICT inclusion of the older people (Loipha, 2014; Boz et. al, 2015). Social inclusion through ICT training can be considered more as a normative model of society's relationship with the older people.

A more traditional view associates social inclusion with friendship and neighborhood relationships, i.e. age-diverse or multi-generational communities.

Recent studies of internet communities of older people have shown that “older users become members of communities of interest to them, but are not in a hurry to establish relationships of “virtual friendship” (Walsh et. al, 2017). Online communities are initially formed in offline environments and then serve as a means of maintaining communication and discussing activities (Vidyasova, 2018). These communities can hardly be described as social, as they lack mutual support and return/reciprocity relationships.

New methods of information processing and the technological developments of the last decades also required mass training and retraining of all workers. Thus, in the late 1980s and early 1990s in Russia, workers over the age of 40 were declared non-prospective, and people of pre-retirement age were regarded as ballast, and early retirement was encouraged (Ivankina et. al, 2017; Kiselyova et. al, 2018). It is important to see this problem of the new mass stratum of society – pensioners – in the context of social status and professional qualification, rather than age-related changes.

An important aspect of the training and use of ICT by older people in Russia is communication. ICTs provide new opportunities to maintain closer contact with their loved ones and acquaintances, which is very important, as contacts become fewer with age and often the communication circle of older people is often limited, especially in the case of unemployed pensioners. At the same time, communication with your relatives, children, grandchildren and friends, who may be scattered in different cities and countries, comes to the fore (Grigorieva et. al, 2019).

The modern generation of the older people differs greatly from previous generations, not only in terms of their high levels of education and existing skills, but also in terms of their desire and qualifications to continue working and to use ICT (Galkin, 2022). This suggests that the problem of age-related digital inequality will disappear over time. And now we are in some kind of in-between state, where there are “digital natives” – the younger generations and, so far, the elders who are completely “analogue”, but who are being included in the digital space by becoming internet users.

An important factor affecting internet use among older people in developing countries is their motivation which determines their willingness (or unwillingness) to use new technologies (Kenny, 2002; May, 2014). Findings from research conducted in developing countries point to similar determinants that broaden the digital divide and prevent older people from using the Internet. Key determinants include a lack of knowledge about ICT and the influence of beliefs and a specific culture that prevent older people from learning new technologies

and limit them to offline means of communication (Mubarak, 2015; Mubarak et. al, 2017; Aggarwal et. al, 2020; Lopez-Sintas et. al, 2020).

As researchers note, an important factor in introducing older people to the Internet in developing countries is culture and values that determine the motivation and willingness of older people to use new technologies and integrate them into daily life (Van Dijk, 2020; Dutton et. al, 2019). For instance, stereotypes about the impracticality of using the Internet in daily life hinder its use among older people. Accordingly, these stereotypes prevent older people from embracing new technologies in their daily lives (Mariano et. al, 2020; Mannheim et. al, 2019).

In European countries, there is a clear cultural divide between the developed countries of the West and the developing countries of the East. In the developed countries of Western Europe, the use of the Internet, the digitalization of various services, and the development of communication between older people began as early as the 1990s. After the fall of the communist regimes in the 1990s, the countries of Central and Eastern Europe did not have the necessary infrastructure for the development of the Internet (Klimova et. al, 2018; Tochkov, 2015; El Ouiridi et. al, 2016). With the development of the networks and personal computers in the 2000s, the situation has started to change fundamentally.

Nevertheless, there is still a clear division of European countries into two groups. The first group includes the industrialized countries of Central Europe (such as Poland and the Czech Republic, where the development of the Internet and various services for older people have managed to overcome the stereotypes, while programs for learning ICT have been integrated into local social programs of active ageing), as well as the countries of Southern Europe (mainly Bulgaria and the countries of the former Yugoslavia, where the digital divide is widespread among older people, particularly rural residents, who have no access to the Internet and no opportunity to learn ICT skills) (Dragulanescu, 2002; Barbovschi et. al, 2013; Zbinkowski, 2019). Eurostat data show that the countries of Southern Europe are the slowest to start bridging the digital divide. It is important to note that the countries of Southern Europe are lagging behind in technological development, which means that they have fewer opportunities to use the Internet and need to develop the necessary infrastructure (Eurostat, 2022).

Developing countries, in particular Russia, have similar problems that widen the digital divide (for instance, the lack of a relevant culture of Internet use among older people). These problems include, for instance, cultural stigmatization and stereotypes about the impracticality of Internet use prevalent among older people. It is important to note here that Russia is very diverse and the situation

in the regions may differ significantly in terms of the digital divide. The problem of digital inequality requires an integrated approach, and in the case of Russia, taking into account the multi-ethnic dimension. One of the tools to understand the level of digitalization and the degree of the digital divide can be a “digital passport” (Vartanova et al, 2021; Vartanova, & Gladkova, 2022). In general, older people in Russia, Eastern Europe, and several developing countries do not understand the individual particularities, the role of the environment, and the local circumstances of Internet use among older people. As far as the Russian context is concerned, it should be noted that the Rosstat data show a stable increase in the share of older Russians using the Internet. Thus, in the last five years, since 2017, the share of active² Internet users over 60 years old has almost doubled – from 8,3% to 16,1% in 2021³.

Practices of computer and Internet usage in the older group are becoming less different from those of younger age groups. The Internet for the older people is also a source of information, a tool for maintaining communication in social networks and messengers (Bikkulov, & Sergeeva, 2016). At the same time, the researchers note that modern digital services (including various portals, dating applications, online cinemas, etc.) often do not take into account or insufficiently take into account the interests of the older generation. If we talk about emerging new services that have an age parameter (for example, the role of “I am a pensioner” in the system of electronic city services developed in St. Petersburg), then they usually take into account the educational and leisure needs of older people, which is already a lot, but there is room for development, for example by adding flexible search options/part-time employment of interest for older people (Grigoryeva et. al, 2023). As modern research reviews show, Russian older people most often use the Internet to search for new information and improve their knowledge, including through active consumption of online media resources (Grigoryeva, & Petukhova, 2019). Analyzing media consumption in small Russian cities, researchers point to its hybridity, which means that young people prefer online media, middle-aged people prefer mixed sources (Internet, TV, newspapers), and older people focus on TV and paper newspapers (often of local importance) (Novgorodtseva, & Sivkova, 2021).

To a certain degree, the pandemic accelerated the process of digitalization and, as a result, increased the use of ICT among older people. During the period

² People who use the Internet at least once a week.

³ Rosstat. Information technologies and information and telecommunication networks usage among the population. URL: <https://rosstat.gov.ru/storage/media-bank/Trud5-1.xlsx> (accessed on 01.09.2022).

of self-isolation, the older generation actively used devices, the Internet, and messengers to maintain communication with relatives and search for necessary information, as well as to receive help and support from online communities on health issues, which proved to be particularly relevant in rural areas (Parfenova, & Petukhova, 2022; Galkin, 2021).

The pandemic accelerated the pace of digitalization and, resulting in an increase in the use of ICT by older people. However, after the end of the active phase of the pandemic, there has been some “rollback” in Internet use – the researchers document this by studying online and offline associations of silver volunteers, explaining such a rollback by lack of devices, lack of stable Internet access and lack of ICT skills (Petukhova, et. al, 2022).

The practices of using computers and the Internet in the senior group begin to resemble those of the younger age groups. For older people, the Internet is also a source of information, a means of maintaining communication in social networks and messengers (Bikkulov, & Sergeeva, 2016). A review of research conducted in recent years shows that older Russian people most often use the Internet to search for new information and increase their knowledge. At the same time, in practice, various special courses aimed at teaching ICT skills to Russians over 60 do not facilitate their further employment (Grigoryeva, & Petukhova, 2019). According to researchers, the digital divide (or information inequality) among older people in Russia, which is manifested in the lower rates of Internet use compared to European countries, is attributed to the low computer literacy and lack of internet-connected devices (Kornilova, 2018).

Many authors tend to regard ICT use in Russia as a form of active leisure activity among older people. Therefore, they tend to highlight positive narratives and positive views of the Internet used by older people and ignore the barriers and negative implications, including challenges related to the specific context (Vidyasova, & Grigorieva, 2018; Moskvina, 2020; Belyi et. al, 2022). Our research continues the established approach to the study of older people and ICT, seeking to explore and reflect on the practices of Internet use among older people using qualitative methods. Using in-depth interview material, we focus on the reconstruction and thick description of the meanings, barriers, and role of ICT in the lives of older people, and identify strategies of ICT use.

Theoretical and methodological framework

Initially, an important and significant factor in the adoption of new technologies and the reduction of the digital divide among older people is the

concept of interest, which determines the overcoming of the barrier between PC users and those who do not use computers (Law et al, 1986). Following the principles of the actor-network theory, an older user can be seen as an actor using new technologies, who reaches a certain limit while being wedged between two opposing forces (i.e. willingness and unwillingness to learn ICT). The actor is an older person in a situation when they cannot continue to do what they have done before without using new technologies. In other words, the familiar patterns are disrupted and communication and interaction in this world becomes possible only with the use of the third force – embracing the technologies and achieving balance between willingness and unwillingness to be integrated into ICT. In this case, there is a convergence between the interest and the need to use technologies. As a result, there is a discrepancy between new and old experiences, communication with and without the use of ICT. Learning to use a computer starts as soon as the experience of using a computer acquires conceptual and existential relevance to daily experience. In this way, it is the subjective willingness (or unwillingness) to overcome difficulties and discrepancies, the willingness to integrate and use new experiences in daily life, which becomes important in this interpretation of ICT use (Furlong, 1995; Oudshoorn, & Pinch, 2003; Richardson, Weaver, & Zorn, 2005). Modern reviews distinguish four theoretical models used to study older people's adoption and use of technology and the determinants that influence this process. The models were developed in chronological order: each new model was based on the previous one, with updates and additions (Klimova, & Poullova 2018).

The Senior Technology Acceptance Model (STAM) was developed and proposed by researchers as a combination of their own qualitative research and the results of other studies on mobile phones use among older people (Renaud, & Van Biljon, 2008). STAM suggests three stages: objectification (when a person develops an intention to use this or another device), incorporation (the stage of active use and testing), and conversion (the stage at which a person makes the final decision on using the technology). At each stage, there are components that influence how each stage will be implemented and whether or not an older person becomes an active user of a mobile phone (in the case of this research). Thus, at the objectification stage, a person develops an intention to use a technology, which is influenced by expectations of its practicality and the user context (which includes the social environment). In the incorporation stage, a person actively uses and tests the technology, and finally reaches the final stage where a decision is made to either adopt

or abandon the technology. In our research on Internet use, we examine the experiences of older people in the context of all three stages and attempt to identify the determinants that influence how the informants use (or do not use) the Internet.

We focus on describing the experience of using the Internet and its perception and role in the lives of people aged 60+. On the basis of these experiences, we determine how inequalities and the digital divide develop in the lives of older people. In this case, it is the subjective perception of Internet use, which in our study includes communication in messengers, forums, use of social networks and interaction with computers, that becomes a part of the experience of older people. These experiences are further analyzed through narratives and stories about overcoming (or failing to overcome) everyday barriers (Al'fred, & Korbut, 2003). Older people's reflections are essential in defining the digital divide (Lee, & Kim, 2019; Neves, Waycott, & Malta, 2018).

In this paper, we regard the digital divide primarily as a combination of subjective qualities: the willingness or unwillingness of older people to learn ICT, to overcome challenges, differences, and difficulties that arise when using new devices, and to solve problems related to the integration of these devices and their functions into daily life, the disruption (or maintenance) of familiar patterns (Pierce, 2019; Van Dijk, 2017; Ragnedda, & Muschert, 2013). We aim to analyze the practices of using (or not using) the Internet on the basis of the elements of STAM and to identify which determinants affect the different stages—from the beginning of use to the acceptance or refusal of use, as well as which barriers prevent the narrowing of the digital divide.

Research methodology

Our research is part of a larger research project on delayed aging in the era of digital development, COVID-19, and uncertainty. The involvement of the older generation in the processes of digitalization is one of the important research areas. The study of the experiences of older people was conducted using the method of semi-structured in-depth interviews and questionnaires. The sample consisted of 210 respondents over the age of 60 (62% women and 38% men) who took part in the questionnaire survey. The quantitative part of the survey in the form of a questionnaire was conducted in May-June 2023. The survey was conducted in person on the basis of the Sokolov Federal State Budgetary Institution North- Western district scientific and clinical center named after L. G. Sokolov Federal Medical and Biological Agency in St. Petersburg. This is a large medical institution consisting of a multidisciplinary hospital with a

capacity of 560 beds, a Central Polyclinic for 1,500 visits per day, five industrial polyclinics, and two branches.

The study sample is continuous and unstratified, as it is limited to patients of the medical institution aged 60 years and over. The choice of this health facility was motivated by the unique opportunity to combine data on the opinions of older patients collected through questionnaires with data on patients' health from the health information system. The study thus provided an opportunity to compare subjective assessments with what are traditionally considered objective indicators of patients' health and established diagnoses. The age range of the respondents is from 60 to 91 years old divided into four age groups: 60-64 years – 22%, 65-69 years – 29%, 70-74 years – 28%, 75-79 years – 15%, 80-84 years – 5%, and 85 years and older – 1%. Almost half of the respondents are people with higher education or an academic degree, 8% have incomplete secondary or general secondary education, 42% have specialized secondary education. Separately, we note that the STAM model was not included in the survey, and the block dedicated to the use of digital services and the Internet serves in this case to give an overall picture of the use of digital services and the Internet by older users and to triangulate our data.

The interviews, in turn, allowed for qualitative analysis. In the interview, we explored the experiences of older people using the method of semi-structured in-depth interviews, focusing on narratives of experiences of Internet use, its role in the lives of the informants, and analyzing how these stories are related to daily lives of our informants aged 60+. We regard an older person (60+) as an actor in a situation where they often cannot continue to do what they have been doing before without using new technologies. We conducted 40 interviews with informants aged between 60 and 95 years old. Of these, 20 people are unemployed (retired) and 20 continue to work.

The level of Internet literacy was not a criterion for selecting informants, as it was important for us to check how the adoption or rejection of the use of the Internet as a new technology was taking place. At the same time, all informants had access or the possibility to access the Internet. An older person (60+) is considered by us as an actor who is in a situation where he often cannot continue to do what he did before without using new technologies, at least in his professional activity. Therefore, one of our hypotheses was that informants who continue to work will be more active Internet users, while among those who have retired there will be those who use the Internet differently or refuse to use it altogether. The age range of the informants:

60-69 years – 24 people (just over half); 70-85 years – 11 people; 85 years and older – 5 people. In comparison with the questionnaire data, the proportions of respondents and informants under 80 are approximately the same (slightly more than half), but informants over 85 are more represented in the interviews.

All informants had access or were able to access the Internet. The analysis was carried out using thematic coding. Although we use STAM, which suggests the presence of specific determinants at each of the three stages – objectification, incorporation and conversion, we did not have the goal of testing each of the suggested determinants in our research. There are two reasons for this. The first reason is that, unlike the developers of the model, we do not reference our qualitative data against a considerable mass of quantitative data, and therefore it is not a matter of rigorous testing. The second reason is that Internet use is specific, unlike mobile phones, and in this case some determinants turn out to be not quite relevant, while at the same time other determinants emerge that were not previously considered. During the analysis, we reconstructed strategies of Internet use. Then, after referencing the strategies against biographical circumstances and relevant narratives of the informants, we formulated the key determinants and barriers influencing the choice of a strategy (or mix of strategies).

Findings

Questionnaire survey

Of the older people we surveyed, 17% consider themselves to be experienced Internet and computer users and can easily master new programs. Approximately 10% regularly use the Internet to interact with government authorities. In addition, 12% of respondents are confident about interacting with public authorities online. Almost one in six older people surveyed said they were afraid to use the Internet. Almost 44% of respondents agree that electronic services become more convenient and useful over time. It is important to note that almost half (48%) still prefer to use the telephone rather than the Internet (to make an appointment with a doctor, to file a complaint, etc.).

The distribution of responses by age and ICT usage skills is presented in more detail in *Table 1*:

Table 1

Combination table age category “I consider myself an experienced Internet and computer user, I easily master new programs, applications and services” (1 – completely disagree, 5 – completely agree)

Age category		Quantity	1	2	3	4	5	Total
			60-69	21	12	53	8	14
Age category	60-69	% in the age category	19,4%	11,1%	49,1%	7,4%	13,0%	100,0%
		70-79	Quantity	27	12	37	9	4
	70-79	% in the age category	30,3%	13,5%	41,6%	10,1%	4,5%	100,0%
		80 and older	Quantity	11	1	3	0	1
	80 and older	% in the age category	68,8%	6,3%	18,8%	0,0%	6,3%	100,0%
		Total	Quantity	59	25	93	17	19
Total		% in the age category	27,7%	11,7%	43,7%	8,0%	8,9%	100,0%

Here we see quite expected results – the younger the age group of respondents, the more confident they feel as Internet users. We observe a similar pattern later when we analyze the interviews.

In the questionnaire, a separate set of questions was devoted to the penetration of digital health services. According to the survey, 56% used the Public Services portal, 38% used the “My Health service” on the “Governmental Services portal”, 33% used the St. Petersburg “Health portal”, 23% opened personal offices in medical institutions, 47% made an appointment with a doctor via the Internet, 50% received analysis in electronic form, 25% used electronic medical records, 16% – telemedicine consultations, 24% left feedback on medical care, 20% use health monitoring applications, 15% – fitness applications. At the same time, positive ratings prevail among those who have used the listed services and applications. It is important to note that in comparison with the results of the survey conducted in 2022, the penetration of the services of the portal “Health of St. Petersburg” and the service “My Health” on the Public Services portal has significantly increased by almost two times.

As mentioned earlier, the pandemic has contributed to the use of digital technology, and this is confirmed by our current survey – 26% of respondents have started to use the Internet frequently to order goods and services and to communicate. First, the survey allows the authors to record the growth of users of platforms related to public health services and demonstrates a fairly

wide range of services used by older users to maintain their health. Second, we see a growing commitment to using the Internet and digital services, which is confirmed by the fact that almost half of the respondents (44%) noted the increasing convenience of services. At the same time, the problem of trust in digital services persists, with half of the respondents preferring to use familiar analogue means of communication (telephone), where this is still possible, rather than digital platforms.

As part of the survey we used scales, which characterize older people themselves as an advanced internet user on the one hand (answers 5-4), and on the other hand, on the contrary, they characterize our respondents as people who do not use the internet in their daily lives (answers 1-2).

The question we asked in the framework of the questionnaire thus allowed us to drive our informants into several groups, each of which has its own unique characteristics in the context of using the Internet and computer technologies. Thus, answers (5-4), as a rule, were given by older people in the age range from 60 to 70 years and are associated with good skills in using both the Internet and information technology, such older people characterized themselves as advanced Internet and computer users, as well as various digital services. At the same time, the group of older people 75+ was characterized by the rejection of the use of information technologies and their occasional use primarily for communication and/or within the framework of ICT skills training by relatives, and also for this group of older people, the rejection of computer technology and the Internet was characteristic, which was justified by the lack of the need to use computer technology, as well as the lack of the desire to master something new, in particular new technologies.

Similar data are also related to the data we obtained during interviews with older people, and in particular, the allocation of the strategy of abandoning the use of the Internet and information technology in the interview was associated precisely with the age of the informants. Also, as part of the questionnaire study, we found that the most involved are older people in the 65-70 group who have the highest ratings of Internet use and information services related to working with the Internet and information technology, as well as those who know how to use computers, as a rule, such skills were acquired by older people as part of their professional activities. When analyzing the preferences and use of information technologies by older people, it was found that e-health services, public services and information services in emergency situations are in the greatest demand. Also, in the course of the study, we recorded a decrease in optimism about solving problems through information technology.

A decrease in optimism was recorded in the 75+ groups and was associated with the idea that information technology and its use are unlikely to solve anything based on their daily use in the framework of a questionnaire survey, such respondents chose answers from 1 to 2 in the questionnaire. For a group of older people who chose answers from 4 to 5, on the contrary, information technology was an opportunity that allowed them both to communicate and find interlocutors on the Internet, and also allowed them to make their lives more convenient and comfortable through the use of information technology. Such older people were usually distinguished by techno-optimism and the use of information technology not only for communication, but also for visiting various government services. Thus, the highlighted unique characteristics of each of the groups of older people evaluating their Internet and information technology skills include age, experience and skill in using a computer and the Internet, and a desire to use information technology, convenience in using information technology. It should also be noted that there are restrictions related primarily to the locations in which the study was conducted and the limitations of the sample itself and its formation. Assessments of the use of information technology by older people and interpretations of the need to use information technology may differ depending on the region and the socio-demographic situation of older people in the region under study.

Interview analysis

As a rule, an older user decides to learn how to use the Internet as a conscious decision influenced by various determinants. Less often it is motivated by professional necessity (for instance, when employees moved to remote working and people aged 60+ had to actively use Internet resources and learn how to use various applications). In contrast to the use of specific technical devices, the period of adoption (testing) of Internet use is blurred and depends strongly on what specific functions are used. For example, once a person has learnt how to use some simple Internet functions (reading news, using messengers), acceptance comes quite quickly. In this case, older people do not stop using these functions due to inconvenience or their inability to get accustomed to them. However, the situation is different for more specialized functions: specific applications (banking, taxis, state services, doctor's appointments) are rarely used by older people. In other words, older people learn how to use the Internet and its functions selectively; they deliberate about the need to learn and use each specific function.

On the basis of the analysis, we have distinguished four most prominent strategies of Internet use among older people, as well as determined the key determinants and barriers influencing the practices of Internet use (or refusal to use it). The strategies are the strategy of information consumption; the strategy of communication; the strategy of using Internet resources; the strategy of refusal. In practice, people often combine different strategies. Let us take a closer look at each of them.

Strategy of information and entertainment consumption

This strategy can be described as the “starting point” for people beginning to explore the Internet. This strategy involves using the Internet predominantly as a source of necessary information and entertainment (watching films, reading books, playing online games). All Internet users follow this strategy in one way or another. *“I enjoy this. As soon as I have free time, I read the news, always keep myself up to date”* (woman, 75 years old, Saint Petersburg).

Information searches can also be targeted when users are looking for specific information on topics of interest.

“If I need a medicine, I look up what it looks like, where the doctor’s office is, should I see this particular doctor” (woman, 81 years old, Saint Petersburg). Most of the time, this strategy is mixed with the next one, i.e. the strategy of communication.

As a rule, representatives of this strategy were older people in the age range from 60 to 80 years old, who had not previously actively used the Internet, but were now interested in its capabilities and wishing to expand the use of information technology in everyday life. It is important to note that such an age range is typical, this is confirmed by research data in other studies however, an important factor is the fact that the help of relatives and the guidance of relatives, as well as training coming from relatives in information technologies of older people, is significant (Vidyasova et. al,2022).

Strategy of communication

Alongside information consumption, this strategy is a starting point. The key factor here is the focus on communication. Messengers and social networks are used to communicate and broaden one’s social circle. In this case, people regard messengers as a means of adapting to the modern social and information environment.

“I talk to my colleagues, friends. We message each other and share some interesting things. Mostly for communication. I am not a blogger. I envy the

modern generation, young people who share their impressions on social networks so easily. I cannot do that. I like reading, I take interest in what is published, and some interesting things” (woman, 63 years old, Saint Petersburg).

An important driver for learning to use the Internet as a means of communication was the realization that it was possible to communicate with relatives who lived far away in real time, via video calls, rather than waiting for several weeks for another letter to arrive.

This strategy became especially relevant during the pandemic, when older people used messengers and video calls to reconnect with their families.

The age range of representatives of this strategy is also very extensive and usually starts from 60 years old and ends at 75 years old. Representatives of the strategy of communication were usually older people who lived separately and needed constant communication and interaction with relatives, and therefore the development of information technology in this case was necessary for such older people. It should be noted that, like representatives of the strategy of information and entertainment consumption, representatives of the communication strategy had completely different professional backgrounds, but as a rule, within the framework of previous employment, they rarely used the Internet and had little computer and Internet skills.

Strategy of using Internet resources

This strategy is characterized by the focus on the use of Internet applications and resources. Here we observe the use of the Internet for professional purposes, self-education, and broadening one’s knowledge, as well as the use of various digital resources (buying tickets, online reception, electronic libraries, booking a doctor’s appointment, etc.). Sometimes the increase in Internet use for professional purposes was forced (for instance, during the pandemic). In this case, users experienced difficulties in the introductory phase (testing), and in the final phase (conversion) they refused to use the services as soon as they could afford not to. Thus, one of the informants, a musician, describes her experience of giving dance lessons online: *“Teachers were shown how to set Zoom, all these conferences. Teachers were responsible for it, we were on standby, less responsibility on us. They used all the devices. It was very hard, everyone complained that the devices failed them, the Internet connection lagged, children fell out of frame. But it was mostly the teachers. We just sat next to them and worked, but at home, you were on your own. You open Yandex Disc, find a folder. Record music by yourself. Send it. Upload it to a folder, send the folder (...) It is hard, I still rarely use anything” (woman, 67 years old, Saint Petersburg).*

Unemployed older people often use educational resources on the Internet to learn new skills and pursue hobbies. Thus, one of the informants explains how she develops her in craft skills:

“I, for example, enjoy doing something with my hands. Right now, I collect fabric scraps, like that, discarded T-shirts, something like this, cut them into ribbons and make rugs out of them. Then I browse the Internet and start looking up what can be made out of it. For example, out of a plastic bottle. Or out of anything else, something interesting and useful. The things that are not useful, some trinkets, I do not like that. I like making something that can be useful in life, at home” (woman, 77 years old, Saint Petersburg).

For adopters of all three strategies listed, the subjective experience of learning to use computers and overcoming the stress of the digital divide, as well as bridging the gap in the online social environment, is an experience conditioned by two choices. The first choice is made consciously when older people recognize the necessity and importance of using new technologies and at the same time decide to what extent using computers in everyday life is relevant to them. The second choice is the selection of necessary functions and their use in daily life for communication, interaction, and therefore the use of these functions by older people. Initially, users start to learn ICT through the concepts of “interest”, “necessity” and “importance of communication”. The Internet and the personal computers, and often devices that replace the stationary PC, become objects of interest, means of communication, and sources of the necessary information for older people, broadening their social circle, and providing opportunities for professional development and self-education, even in retirement. The Internet becomes a means to satisfy their needs - professional, communicative, leisure, educational, and others.

As a rule, the age range of representatives of this strategy varied between 60 and 77 years. The former professional status and the availability of high qualifications were important, as well as working with computers within the framework of the former employment of informants. Often, representatives of this strategy are older people who have PhD degrees and continue their self-improvement in their professional activities. Similar age and professional characteristics have been highlighted by other researchers studying the use of the Internet by older people, in particular studies on the use of various digital services by older people, note that an important criterion for the active use of various electronic services by the older and deep integration and trust in digital services are associated with professional status and the availability of information technology skills of the older people (Vidyasova et. al, 2022; Grigorieva et. al,

2019). The limitations of this classification are related to regional aspects, and in particular, the older representatives of this strategy lived in a large city, in particular in the federal city of St. Petersburg, and there is still no research data to compare the professional, age and socio-demographic characteristics of the older representatives of this strategy living in other cities.

Strategy of refusal

Finally, the last strategy, the strategy of refusal, is common among older people who have shown no interest in communicating and using Internet resources, social networks, and messengers, or who have negative experiences with using PCs/gadgets that have led them to refuse to use the Internet. As a rule, those who use this strategy consider the use of the Internet to be unnecessary and insignificant, and try to ignore the role it plays. They believe that using the Internet and messengers takes a lot of time and fails to provide them with the necessary connection and communication. Besides, the adopters of the refusal strategy experience fear, which is one of the main barriers to using new technologies in daily life. Sometimes this fear and rejection is the result of a negative experience. Thus, an older man talks about how he was forced to quit his job 20 years ago because he had not learnt special programs needed for his work as a production engineer:

“And everything falls apart. And I am not the only one. [...] At first, I studied it [computer]. Then I, as the chief production engineer, got my personal computer. While I worked, I used something. [...] Another reason I quit my job, I wouldn't have quit, I was asked to stay. I felt very ashamed that to enter [upload data to a program - note] everything I needed I had to ask my employees. It is degrading. Boss asking an employee to enter one thing or another into his computer. I felt ashamed. I am, as they say, inadequate” (man, 83 years old, Saint Petersburg). The previous negative experience has influenced the informant's current practices – he prefers not to use the Internet at all (he used to check football news on his wife's smartphone) because he feels insecure. In this case, we can state that at the stage of incorporation, the user assessed the use of specialized software and Internet functions as inconvenient, causing insecurity and forcing him to ask for help, so he refused to continue using these technologies.

Among those who adopt this strategy, many experience a significant reduction in the number of social interactions and lose previous social contacts.

Other studies also show that after the age of 75, the number of technology users decreases abruptly due to deteriorating mental and physical health (Klimova, & Poulouva, 2018). Nevertheless, the oldest informant in her interview

confessed that she had asked her son to buy her a smartphone “everyone else”, but he had refused and she was disappointed: *“I don’t have these (...) I tell (my son - note): buy me a smartphone like all people have. And he says: what do you need it for when you keep asking me to get rid of everything? What do you need it for? You don’t need it. So I don’t have it, I have never used the Internet”* (woman, 95 years old, Saint Petersburg).

The age range of informants, representatives of this strategy, is between 75 and 90 years old. As a rule, these elderly people have been retired for a long time and were not currently employed. At the same time, the interest in new technologies and their capabilities was quite developed among the elderly representatives of this strategy, but many of the representatives of this strategy faced restrictions created by their relatives or/and age-related restrictions that also hindered the desire of older people, representatives of this strategy to use information technology and the Internet in everyday life. If she had received support from her relatives, the informant would probably have been able to learn how to use the messenger and adopt the strategy of communication. For this reason, in this case, we can speak of insufficient support from the social environment at the stage of objectification.

Determinants and barriers affecting Internet use or refusal to use

Having described the main strategies and analyzed the correlation between Internet use practices and biographical circumstances, we have identified several principal determinants influencing whether an older person will use the Internet and for what purpose. The main determinants are age, presence and nature of employment, social environment and family, and ownership of a smartphone. Active professionals up to the age of 75 combine all three strategies. This group uses the Internet most actively. At the same time, the adopters of the first two “starting” strategies – information consumption and communication – are unemployed informants or those not engaged in intellectual work. They noted the difficulty of mastering technologies and expressed their wish to limit their use to a minimum number of functions.

The family and social environment have a vital influence at the stage of objectification – they often become the driving force behind the use of the Internet by older people. Close relatives, as well as special courses, are the main sources of Internet skills for older people. These sources are often combined: *“I went to learn computers at a German church. It was difficult to study, they taught the old folks. It was some time ago. More than five years ago, maybe around 10. Still, of course my son and especially my youngest grandson help me learn the computer, if I do not understand something”* (woman, 85 years old, Saint Petersburg).

We consider the ownership of a smartphone to be one of the important determinants facilitating access to the Internet and allowing easy and quick adoption of the strategy of communication. The informants themselves talk about a clear division between mobile devices: smartphones, tablets, and computers connected to the Internet. Mobile devices save time and allow people to be more mobile and integrated into the digital environment. At the same time, a stationary PC is more difficult to use and move around and less user-friendly for the most popular Internet functions (communicating, reading information, using applications). Here is how one informant commented on her “evolution” of gadgets: *“Let’s start with the evolution of my gadgets. At first, it was a stationary computer. (...) then we got more computers. And I had everything. And voice recorders, and photo cameras, and phones, as soon as they became available. And then a smartphone. I also had a tablet and a stationary computer. And finally, what I enjoy about my work is that I have my notebook, which stores all the materials. I take it from home to work, and from work back home. And when I am not working on my notebook, I have a smartphone that I use; it has many apps, which my children, and first of all my students, tell me about. If there is something new, they tell me about it”* (woman, 62 years old, Saint Petersburg).

According to the interviews, one of the main barriers is a lack of motivation to use the Internet in general or to broaden the possibilities of its use. At the same time, age was still an important criterion for active professionals, namely, the younger the age, the greater the involvement of older people in information technology and Internet use skills. It is also important to have higher education and ICT skills. It should also be noted that age and lack of skills in using information technology and the Internet by older people were one of the important barriers for older people when integrating into digital technologies and the environment. It was with age, namely after reaching the age of 75, that older people tended to lose motivation and the very desire to use digital technologies and be active Internet users. Also, such a desire disappeared due to the lack of skills in using ICT, as a rule, professional skills. Such interview data is confirmed by the data of quantitative research (survey) and other studies that note age and skills as one of the important criteria for the integration of older people into information technology.

Conclusion

Our research shows an increase in older users’ commitment to using the Internet and digital services. This is confirmed by the fact that almost half of the respondents (44%) noted the increasing convenience of services (using the

example of assessments of services related to healthcare and public services). At the same time, the issue of trust in digital services remains, with half of the respondents preferring to use familiar analogue means of communication (telephone), where this is still possible, instead of digital platforms.

The study allowed us to identify and analyze four different strategies adopted by people aged 60+ when using the Internet and its resources: the strategy of information and entertainment consumption; the strategy of communication; the strategy of using Internet resources; and the strategy of refusal. Going through the stages from objectification (intention to use) to conversion (making the final decision on future use) and choosing a strategy for Internet use (or refusal to use it) depends on several determinants. The main determinants that influence which strategy an older person adopts are age, professional activities and their nature, social environment and family, ownership of a smartphone (as a more practical and user-friendly device compared to a PC), and the type of Internet resource. Close relatives and special courses are often the driving force and source of Internet skills. Active professionals up to the age of 75 tend to use the Internet to its maximum potential, including for professional purposes. The pandemic and technological progress (appearance of a variety of user-friendly smartphones with Internet connection as an alternative to PCs) have facilitated the bridging of the digital divide and encouraged older people to use the Internet more actively, predominantly for communication and information.

The type of Internet resource plays an important role: in the case of communication and information consumption, acceptance develops quicker because these functions are easy to learn in contrast to more specialized Internet services and applications. We have identified several main barriers to starting and broadening practices of Internet use. The main barrier is the lack of motivation and/or lack of support from the social environment - in this case at the stage of objectification older people do not develop sufficient demand. Other barriers include the lack of user-friendly devices, non-intuitive interfaces, and insufficient knowledge required for specialized programs/applications. This results in a refusal to use the Internet at the stage of incorporation or, in the case of active users, prevents them from expanding their Internet use practices.

Among the variety of practices of our informants, we did not encounter formats such as computer games or blogging, which implicitly indicates the low popularity of these formats among older people.

The strategies identified in the research provide an insight into the particularities of Internet use among older people in a developing country. As

part of our identification of strategies for using the Internet and information resources, we have identified that the most significant for choosing a strategy of communication and strategy of using Internet resources of older people from 60 to 75 years old, the availability of professional higher education and, as a rule, the availability of skills in using the Internet and information technology in the past or in the present. At the same time, this age range is dominant in terms of motivation for the use of the Internet and information technology, this is confirmed by the data of a quantitative survey. A group of older people aged 75 to 95, on the contrary, had difficulty using the Internet, which was quite well recorded in interviews, and also this group of older people had less motivation and optimism in using ICT in their daily lives. At the same time, despite the strategies outlined in the study, which are based, among other things, on the work of other authors investigating the use of ICT by older people in St. Petersburg, a number of limitations existing within the framework of qualitative and quantitative research should be identified, and above all these limitations relate to regional specifics. It should also be noted that our informants were a group of older people with a certain status and socio-demographic situation and living in the large city of St. Petersburg, it should be noted that for informants from rural areas and small towns, Internet use and engagement, and information technology, may also differ.

In the future, the data obtained in this study and the highlighted strategies may become a starting point for conducting similar studies in other regions and regional comparisons of the strategies obtained in the work with strategies for using the Internet and ICT by older people from other regions of Russia. Nevertheless, the strategies identified support the statistical data and research carried out in industrialized countries of Central and Eastern Europe and the world, and testify that the common determinants that prevent older people from using the Internet are environment, lack of motivation and stereotypes, cultural clichés, and lack of knowledge and ICT skills.

References

Aggarwal, B, Xiong, Q, & Schroeder-Butterfill, E. (2020). Impact of the use of the internet on quality of life in older adults: review of literature. *Primary Health Care Research & Development*, 21.

Al'fred S. H., & Korbut A. (2003). O mnozhestvennosti real'nostej [On the multiplicity of realities]. *Sociologicheskoe obozrenie*, 2(3), pp. 3–34.

Barbovski, M., & Fizesan, B. (2013). Closing the gap, are we there yet? Reflections on the persistence of second-level digital divide among adolescents in

Central and Eastern Europe. *The Digital Divide: The Internet and Social Inequality in International Perspective*, pp. 179–192.

Belyi V. A., Vidiysova L. A., & Chugunov A. V. (2022). Citizens E-participation in the modern metropolis: Area and specifics. *Vestnik of Saint Petersburg University. Sociology*, 15(2), pp. 105–122. DOI: 10.21638/spbu12.2022.201

Bikkulov A. S., & Sergeeva O. V. (2016) “A computer is not a luxury, but a means ...”: Inclusion in the digital world of older age groups according to the results of an empirical study. *Bulletin of the Nizhny Novgorod University. Series: Social Sciences*, 2(42), pp. 95–103.

Boz, H., & Karatas, S. E. (2015). A review on Internet use and quality of life of the elderly. *Cypriot Journal of Educational Sciences*, 10(3), pp. 182–191.

Czaja, S. J., Guerrier, J. H., Nair, S. N., & Landauer, T. K. (1993). Computer communication as an aid to independence for older adults. *Behaviour & Information Technology*, 12(4), pp. 197–207.

Dragulanescu, N. G. (2002). Social impact of the “Digital Divide” in a Central Eastern European country. *The International Information & Library Review*, 34(2), pp. 139–151.

Dutton, W. H., & Reisdorf, B. C. (2019). Cultural divides and digital inequalities: attitudes shaping Internet and social media divides. *Information, Communication & Society*, 22(1), pp. 18–38.

El Ouiridi, M., El Ouiridi, A., Segers, J., & Pais, I. (2016). Technology adoption in employee recruitment: The case of social media in Central and Eastern Europe. *Computers in Human Behavior*, 57, pp. 240–249.

Eurostat (2022). *Digital Society Statistics at Regional Level*. URL: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_society_statistics_at_regional_level

Furlong, M. (1995). Cyber seniors: Technology as a means, not an end to online community. *Digital Media*, 5(5), pp. 27–28.

Galkin, K. (2021). E-HEALTH i onlajn-soobshchestva zdorov'ya v povsednevnosti pozhylyh sel'skih zhitelej v period pandemii [E-HEALTH and online health communities in the everyday life of elderly rural residents during the pandemic]. *Uspekhi gerontologii*, 4(34), pp. 538–544. DOI: 10.34922/AE.2021.34.4.005

Galkin, K. (2022). Digitalization volunteering of the elderly during the pandemic: Opportunities and barriers in the context of artificial intelligence. *Journal of Social Policy Research*, 20(3), pp. 377–392.

Grigoriyeva I., & Petuhova, I. (2019). Internet-praktiki pozhylyh: 10 let razvitiya i izucheniya [Internet practices of the older people: 10 years of development and study]. *Gosudarstvo i grazhdane v elektronnoj srede*, 3, pp. 78–90. DOI: 10.17586/2541-979X-2019-3-78-90

Grigoryeva, I., & Ravchik, M. (2023). Ecosystem of Urban Services (EUS): Priority needs for social (digital) services of the older generation. *The Journal of Social Policy Studies*, 21(3), pp. 551–564. DOI: 10.17323/727-0634-2023-21-3-551-564.

Ivankina, L., Trubchenko, T., Krukovac, E., Shaidullina, A., Shaftelskaya, N., & Chernyak, V. (2017). The use of Information and Communication Technologies by elderly people (sociological survey data). In F. Casati, G. A. Barysheva, & W. Krieger (Eds.), *Lifelong Wellbeing in the World – WELLSO 2016, 19. European Proceedings of Social and Behavioural Sciences* (pp. 235–242). Future Academy. DOI: 10.15405/epsbs.2017.01.32

Kanayama, T. (2003). Ethnographic research on the experience of Japanese elderly people online. *New Media & Society*, 5(2), pp. 267–288. DOI: 10.1177/1461444803005002007

Kenny, C. (2002). Information and communication technologies for direct poverty alleviation: Costs and benefits. *Development Policy Review*, 20(2), pp. 141–157.

Kiselyova, E., & Castells M. (2018). *Russia in the Information Age. Russia in the New Century*. NY: Routledge.

Klímová, B., Poullová, P., Šimonová, I., Pražák, P., & Cierniak-Emerych, A. (2018). Internet use by the older adults in the Czech Republic. *Ekonomie a Management*, 21, pp. 220–232. DOI: 10.15240/tul/001/2018-3-014

Kornilova, M. (2018) Internet kak adaptacionnyj resurs pozhilyh pol'zovatelej [The Internet as an adaptive resource for older users]. *Izvestiya Saratovskogo universiteta. Novaya seriya. Seriya Sociologiya. Politologiya*, 3(18), pp. 250–259. DOI: 10.18500/1818-9601-2018-18-3-250-259

Latour, B. (1993). *The Pasteurization of France*. Harvard University Press.

Law, J., Fyfe, G., Callon, M., Latour, B., Rayner, S., & Douglas, M. (1986). Power, action and belief. A new sociology of knowledge? *Sociological (The) Review Keele*, 32, pp. 1–280.

Lee, O. E. K., & Kim, D. H. (2019). Bridging the digital divide for older adults via intergenerational mentor-up. *Research on Social Work Practice*, 29(7), pp. 786–795.

Loipha, S. (2014). Thai elderly behavior of Internet use. *Procedia-Social and Behavioral Sciences*, 147, pp. 104–110.

Lopez-Sintas, J., Lamberti, G., & Sukphan, J. The social structuring of the digital gap in a developing country. The impact of computer and internet access opportunities on internet use in Thailand. *Technology in Society*, 63.

Mannheim, I., Schwartz, E., Xi, W., Buttigieg, S. C., McDonnell-Naughton, M., Wouters, E. J., & Van Zaalén, Y. (2019). Inclusion of older adults in the research and

design of digital technology. *International Journal of Environmental Research and Public Health*, 16(19).

Mariano, J., Marques, S., Ramos, M. R., Gerardo, F., & de Vries, H. (2020). Too old for computers? The longitudinal relationship between stereotype threat and computer use by older adults. *Frontiers in Psychology*, 11.

May, J., Waema, T. M., & Bjåstad, E. (2014). Introduction: The ICT/poverty nexus in Africa. *ICT Pathways to Poverty Reduction: Empirical Evidence from East and Southern Africa*, 1.

Morris, J. M. (1994). Computer training needs of older adults. *Educational Gerontology: An International Quarterly*, 20(6), pp. 541–555. DOI: 10.1080/0360127940200601

Moskvina, N. (2020) Development of digital technologies by pensioners: From the current situation to new opportunities. *Social Work: Modern Problems and Technologies*, 1, pp. 148–156.

Mubarak, F. (2015). Towards a renewed understanding of the complex nerves of the digital divide. *Journal of Social Inclusion*, 6(1), pp. 71–102.

Mubarak, F., & Nycyk, M. (2017). Teaching older people internet skills to minimize grey digital divides: Developed and developing countries in focus. *Journal of Information, Communication and Ethics in Society*, 1.

Neves, B. B., Waycott, J., & Malta, S. (2018). Old and afraid of new communication technologies? Reconceptualising and contesting the ‘age-based digital divide’. *Journal of Sociology*, 54(2), pp. 236–248.

Novgorodtseva, A., & Sivkova, N. (2021). News media consumption by residents of small towns of Russia. *Koinon*, 2(3), pp. 158–168. DOI: 10.15826/koinon.2021.02.3.033

Olsson, T., Samuelsson, U., & Viscovi, D. (2019). At risk of exclusion? Degrees of ICT access and literacy among senior citizens. *Information, Communication & Society*, 22(1), pp. 55–72.

Oudshoorn N., & Pinch T. (2003). *How Users Matter: The Co-construction of Users and Technology (Inside Technology)*. MIT Press.

Parfenova O., & Petukhova I. (2022). Vliyanie pandemii COVID-19 na zhizn' starshego pokoleniya v gorodskom i sel'skom kontekstah (The impact of the COVID-19 pandemic on the lives of the older generation in urban and rural contexts). *Sociologicheskie issledovaniya*, 5, pp. 71–80. DOI: 10.31857/S013216250018704-7

Petukhova, I., & Shchekina, I. (2022). Pozhilyye lyudi v setevom prostranstve [Elderly people in the network space]. *International Journal of Open Information Technologies*, 10(11), pp. 35–40.

Pierce, J. (2019). Digital divide. *The International Encyclopedia of Media Literacy*. URL: <https://mediaeducationlab.com/pub/international-encyclopedia-media-literacy>

Ragnedda, M., & Muschert, G. W. (2013). The double digital divide and social inequality in Asia: Comparative research on Internet cafes in Taiwan, Singapore, Thailand, and the Philippines. In *The Digital Divide* (pp. 305–316). NY: Routledge.

Renaud, K., & Van Biljon, J. (2008). Predicting technology acceptance and adoption by the elderly: A qualitative study. In *Proceedings of the 2008 annual research conference of the South African Institute of Computer Scientists and Information Technologists on IT research in developing countries: riding the wave of technology* (pp. 210–219).

Richardson, M., Weaver, C. K., & Zorn Jr., T. E. (2005). 'Getting on': Older New Zealanders' perceptions of computing. *New Media & Society*, 7(2), pp. 219–245. DOI: 10.1177/1461444805050763

Timmermann, S. (1998). The role of information technology in older adult learning. *New Directions for Adult and Continuing Education*, 77, pp. 61–71.

Tochkov, K. (2015). The efficiency of postal services in the age of market liberalization and the Internet: Evidence from Central and Eastern Europe. *Utilities Policy*, 36, pp. 35–42.

Van Dijk, J. (2020). *The Digital Divide*. John Wiley & Sons.

Van Dijk, J. A. (2017). Digital divide: Impact of access. *The International Encyclopedia of Media Effects*, pp. 1–11.

Vartanova, E., Gladkova, A., Lapin, D., Samorodova, E., & Vikhrova, O. (2021). Theorizing Russian model of the digital divide. *World of Media. Journal of Russian Media and Journalism Studies*, 1. DOI: 10.30547/worldofmedia.1.2021.1

Vartanova, E., & Gladkova, A. (2022). From digital divides to epistemic divides: The rise of new inequalities in the conflict media space. *World of Media. Journal of Russian Media and Journalism Studies*, 4, pp. 5–22. DOI: 10.30547/worldofmedia.4.2022.1

Vidyasova L., & Grigorieva I. (2018) Study of the influence of Internet communities on the social inclusion of older people through leisure practices. *Successes of Gerontology*, 31(4), pp. 597–603.

Vidyasova, L. (2018). The main characteristics of the educational online communities of older people Vkontakte. *State and Citizens in the Electronic Environment*, 2, pp. 105–111.

Vidyasova, L., Kuznetsova, E., & Grigorieva, I. (2022). Integration of the elderly into the information space: a research case of St. Petersburg. *Successes of Gerontology*, 35(5), pp. 668–678.

Walsh, K., Scharf, T., & Keating N. (2017). Social exclusion of older persons: A scoping review and conceptual framework. *European Journal of Ageing*, 14, pp. 1–18.

White, H., McConnell, E., Clipp, E., Bynum, L., Teague, C., Navas, L., ... & Halbrecht, H. (1999). Surfing the net in later life: A review of the literature and pilot study of computer use and quality of life. *Journal of Applied Gerontology*, 18(3), pp. 358–378. DOI: 10.1177/073346489901800306

Zbińkowski, G. (2019). The three seas initiative and its economic and geopolitical effect on the European Union and Central and Eastern Europe. *Comparative Economic Research. Central and Eastern Europe*, 22(2), pp. 105–119.