Ageing in the Digital Age: An Inquiry into the Adoption of Digital Technologies among Senior Citizens

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Abstract

Rapidly growing digitalisation and societal trends like population ageing and increased life expectancy are hallmarks of the twenty-first century. Our societies and our environment are constantly changing due to the rapid development of new digital technology. This means that most people—including senior citizens—must accept technology as an integral component of daily life and constantly adjust to and incorporate new digital technologies into daily routines and living settings. Numerous technology solutions could enhance the elderly population's quality of life (QoL). However, compared to younger generations, seniors are less likely to accept and adopt digital technologies and benefit from them. This study examines the factors influencing senior citizens' decisions about adopting digital technologies. Given the expanding body of research on the advantages of technology use for older persons, it is critical that we comprehend the factors that influence adoption.

Keywords: Senior Citizens, Technology Adoption, Ageing, Decision Making

Introduction

Even though its two founders, Charles Darwin and Herbert Spencer, are deceased, the theory of evolution is everlasting. This theory's applicability stems from the realisation that humanity is a by-product of natural evolution, closely related to scientific and technological advancement. They are the only species able to control their future, which is one of their key qualities. Darwin was already aware that this trait depends on people's ability for symbol-based communication.

In terms of social, scientific, technical, and communicational progress, we have now surpassed a threshold value. Both people and technology have always moved. Living in a digital society is a theme that deals with this evolutionary threshold's initial stage.

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The development of more adaptable and personalised media due to advancements in digital communication technology has a significant impact on people's daily lives and how those lives are changed. The possibilities of a digitised, rapidly evolving media environment have radically revolutionised information and communication technologies. The fundamental communication concepts that are true today—and will still be true tomorrow—are being called into serious doubt by the rapid digitisation of all media elements. Those who cannot access and use modern digital technologies will not be able to determine their destiny in a world that is almost wholly dependent on these technologies. Numerous factors can be directly linked to the adoption of modern technologies. How a person uses new technology can be significantly influenced by how they access it. In addition, a person's intended use of technology should be given priority when choosing or implementing a new technology over an existing one. They might tend to use technology that they perceive to be "necessary" for their surveillance. Some people neither are early adopters nor have exposure to these technologies through experience or familiarity. This is particularly true considering the elderly population.

Over the past ten years, the number of older individuals (65+) who use digital technologies like the internet and cell phones has considerably expanded. The adoption of technology by older persons has increased, although they still lag behind the overall population (Anderson and Perrin, 2017). Compared to younger individuals, they are still less inclined to acquire those technologies, and as they get older, they become more likely to stop using them (Berkowsky et al., 2018). This is disappointing since a growing body of research indicates that older individuals' quality of life may be considerably improved by using technology. For instance, among older adults, internet use has been linked to significant reductions in depression (Cotten, Ford, Ford, & Hale, 2014), loneliness (Chopik, 2016; Czaja, Boot, Charness, Rogers, & Sharit, 2017), increased sense of belonging (Sum, Mathews, Pourghasem, & Hughes, 2009), psychological well-being (Chen & Persson, 2002), and life satisfaction (Heo, Chun, Lee, Lee, & Kim, 2015).

Technology has come in many forms to help the elderly with daily tasks, including computers, the internet, digital healthcare technology, and others. Technology is therefore thought to have a significant potential to aid and prolong older independence, improve mental and physical health, and increase well-being by bridging the gap between their needs and wants. Senior citizens gradually embrace various digital technologies, though in a modest phase. The key issue in this situation is why and how senior citizens use digital technologies. What are the underlying causes of its adoption? Despite the benefits of embracing new technologies, older persons acquire them more slowly than younger adults do. Therefore, to boost the

elderly's acceptance of new technologies, it is essential to identify the elements that may affect their desire to use them.

Technology acceptance and adoption is a complicated and dynamic process, as shown by the many factors that make up those technology acceptance models, both generally and within those specifically relevant to older individuals. It entails comprehending not just what makes technologies easier to use but also what barriers that can prevent people from accepting a technology fully and firmly integrating it into their lives and routines to maximise the potential benefits. The goal of this study is to comprehend the wide range of considerations that older persons look into while deciding whether or not to adopt new technology. The social, personal, and technological elements that support older persons learning digital technology may be identified with a sociological knowledge of these contexts and interactions connected to the usage of new digital technology in later life and learning processes among older people. It is important that these acceptance factors and the models they constitute are reviewed and modified to reflect current acceptance contributors as the technologies themselves evolve—both in form factor and capabilities.

Digital Technologies

In their most technical form, digital technologies use a digital sequence as an interface between the source and the channel input and, of course, between the channel output and, finally, the destination (e.g., binary digits (0,1)). The systems, equipment, and procedures utilised to gather, store, and process data are regarded in this study as digital technologies. These include devices such as feature phones, smartphones, computers, laptops, tablets, or services and applications such as the internet, e-mails, healthcare applications, ATMs, e-banking, online shopping, or online gaming.

Senior Citizens

As stated by the 'National Policy on Older Persons' adopted by the government of India in January 1999 senior citizen is a person of age 60 years or above.

The Proposed Study

Ageing can be classified into primary and secondary. While primary ageing refers to the purely biological process, secondary ageing is more regarded as being cognitive, affective, and social. The term "cognitive ageing" describes a decline in the capacity to assimilate new information. The diminished ability of the individual to adjust to a changing environment is known as affective ageing. The term "social ageing" describes a decline in meaningful social engagement. All of these things indicate that "age" has a significant influence on how digital technologies are adopted.

Digital technologies are predicted to become more integrated into daily life than they already are. Every aspect of society has already been invaded by these technologies as daily life becomes more digitalised, from information to purchasing train tickets, using e-governance, to doing online banking operations. Numerous research have established the status of young people in the digital world, their difficulties, and their pitfalls, but it seems that there haven't been enough studies done to examine the role of senior citizens in digital communication. Therefore, it is vital to determine the gaps between what is known and what is unknown regarding the adoption of technology by older people. The proposed study is an attempt to find out why and how senior citizens learn to adapt to digital technologies. The study tries to:

- trace out the factors and contexts that are key to adopting digital communication technologies among senior citizens.

- analyse how senior citizens learned to adapt to digital communication technologies.

- figure out the barriers which prevent the adoption of digital communication technologies among senior citizens.

Methodology

A structured questionnaire survey is the method of inquiry adopted for this study. Senior citizens aged 60 or above were asked to respond to the questionnaire. The structured questionnaire was developed to understand more about the senior population's adoption of digital technologies and comprehend many aspects of their usage of the medium, including the barriers that stand in their way. Through this survey, the researcher could directly interact with the senior citizens and get their opinions on these technologies to determine their adoption among them and comprehend how these technologies affected their daily lives.

In addition to administering the survey questionnaire, the researcher also made informal deeper conversations with them, enquiring about the various aspects of using digital technologies and the crises or issues that these technologies could help them with. The respondents provided insightful feedback and recommendations.

Plot of the Study

The Thiruvananthapuram district's rural and urban areas were the fields selected for the study. Before beginning the data gathering process, the field was divided into urban and rural areas for the study's aim and to match the established criteria. The study's fundamental geographic divisions comprised corporations, municipalities, taluks, panchayats, and villages to delve further into the subject. It is broadly

separated into urban and rural areas for the convenience of work. The study only included participants who were 60 years of age or older.

Sampling

Stratified sampling is adopted for this study. It aids in ensuring that a sample is taken from an evenly distributed portion of the population or one with comparable features. The researcher stratified the population according to the age range of the sample population. Seniors of age 60 or older were chosen for the study.

The elderly population in Kerala is 11.8% of the total population, according to the 2011 Census. Considering the whole population in the Thiruvananthapuram district, the rural and urban density is 46.34% and 53.66%, respectively. Females constitute 52.09%, and males constitute 47.91% of the total population of the Thiruvananthapuram district.

Thus, a sample of 100 respondents from the urban and rural areas of Thiruvananthapuram was selected to administer the questionnaire. The chosen subjects have the required characteristics, and the researcher eliminated those who failed to meet those criteria.

Sample Description

The respondents were chosen among people 60 years of age and older. The researcher classified the age group into four categories for the analysis, as shown in the table below. The first age range is categorised as 60–66 because this demographic is considered the early elderly population and frequently exhibits similar traits. The majority of responders (73%) belonged to this age group.

Table-1

Age Group	Number of Respondents
60 – 66	73
67 – 76	21
77 – 86	5
87 +	1
Total	100

Male: female ratio taken into account for the study is 50:50, which means that equal numbers of men and women participated in this survey. The researcher collected an equal number of samples from the rural and urban areas, i.e., 50: 50. It is because,

compared to the other Indian states, the rural-urban divide in Kerala is exceptionally very negligible. Among the rural population, 26 respondents (52%) were male and 24 (48%) females. Considering the urban population, the majority (52%) of the respondents were females, 26 in number, and males constituted, 24 in number (48%).

Table- 2

	Rural	**Urban**	**Total**
Male	26 (52%)	24 (48%)	50
Female	24 (48%)	26 (52%)	50
Total	50	50	100

Sample Description by Educational Level

Table-3

Educational Qualifications	**Number of Respondents**
Up to 10th standard	52
Pluto two	16
Graduation	14
Above Graduation	18
Total	100

Analysis

The Extent of Digital Literacy and Mobile Internet Penetration among Senior Citizens

Based on the survey, most (83%) of the samples own a mobile phone. Among them, 56% own a cell phone, 24% own smartphones, and 3% have an iPhone. By subsidising the sample population, it is noticed that the mobile penetration among rural and urban people is 84% and 82%, respectively. Interestingly, iPhone users exclusively belong to the urban population. No one from the rural population ever uses an iPhone.

The responses from the rest of the sample, i.e., those who do not own a mobile phone (17%), point out the 'lack of need' (65%) as the primary factor behind the non-use of mobile phones. 29% respond that they don't know how to use it, and a minor group

(6%) says they are not comfortable using it. It is also evident that mobile usage is higher among males (92%) than females (74%).

Know-how Aspect

Table-4

Know-how aspect of mobile usage statement	Yes	No
To type the number and save it	70	13
To take photos/videos	39	44
To text message	39	44
To switch off and switch on it	71	12
To use internet	27	56
To read messages from the inbox	57	26
To alter any settings	33	50

Table-5

Internet Use	Number of Respondents
Self	31
With the help of somebody	30
Akshaya/FRIENDS centre	39
Total	100

Table-6

Know-how Aspect of Internet Usage Statement	Yes	No
Search information on Google	39	61
To send / read e-mails	34	66
To watch movies	19	81
To read newspapers/books	19	81
To download anything	36	64

These figures indicate that though mobile penetration is high among the aged population, the technology can't go beyond simply replacing the earlier 'land phones'. Mobile phones are one of the latest developments in the telecommunication sector, particularly in rural areas, and most senior citizens are brought up in the age of development of telephones. So they are well familiar with the use of this technology.

And they can replace it with mobile technology. It may be why they can use the base model version of mobile phones.

Considering the know-how aspect of mobile phones, the majority know how to switch off and on, type the number, and save it. It shows that they are not smart enough to use these technologies. Most of the sample does not know how to carry out the significant functions of even the base model. They are not interested to know about it because they think they don't need it. The majority (70%) of the sample does not have an e-mail ID. It shows that e-mail fails to become a typical digital communication medium among senior citizens. During the informal interviews, most of the respondents reacted that even didn't know anything about what an e-mail is. The situation is almost the same in both rural and urban areas.

Based on the data, 39% of the sample uses the internet through Akshaya/FRIENDS centres. The rest of the population uses it by themselves (31%) or with the help of other people (30%). It shows that the internet is highly limited for utility purposes among senior citizens (this is the main reason they depend on Akshaya centres). Still, the rate of internet penetration and the efforts to use it individually or on their own is gradually increasing in number, even in a slow phase. Regarding the know-how aspect of internet usage, the majority know how to search for information on Google (36%). Knowledge about watching movies (19%) and reading newspapers/books (19%) constitutes the most negligible share. From this, it is clear that only a minor portion of the total sample knows even the basic things related to internet usage. There are no considerable differences between the rural and urban populations regarding this aspect. But the divide is evident between males and females, with females being the category with the slightest knowledge regarding internet usage.

The responses clearly state that the aged population has not yet begun using the internet for entertainment purposes, such as watching movies, etc., in contrast to the younger generation. It also confirms that senior citizens are not ready to give up their affinity towards traditional media like print media and television. However, they are in the slow phase of embracing the internet as a medium to stay updated.

The findings suggest that digital literacy, especially literacy related to mobile and internet usage, is low among the aged population. A vast majority do not even consciously gather knowledge beyond these technologies' essential functions. It is because they firmly believe that these technologies are not meant for them, and they don't need them.

The Pattern of Use of Mobile and Internet Technology by Senior Citizens

Table- 7

Purpose of Using Mobile Phone	Number of Respondents
Making phone calls	79 (95%)
Browse on internet	4 (4%)
Listening to music	1 (1%)
Taking photos/videos	0

Table-8

Purpose of Using the Internet	Number of Respondents
Availing online government services	82
Online banking	15
Booking train/bus/air tickets	14
E-mail	20

Among the total samples who own a mobile phone, 95% responds that the primary purpose of their mobile phone use is to make phone calls. Similarly, among internet users, 82% use the internet to avail of various government services. 15% use it for online banking facilities. This indicates that digital communication technologies, especially mobile and internet, primarily serve the utility function among senior citizens rather than a medium for entertainment, information or participation. Internet fails to act as a mass medium among senior citizens.

The study revealed an interesting point. Though the government's e-governance initiatives compelled people to depend on the internet for various needs, a large majority (59%) still feel comfortable with traditional methods like filling out the application form and submitting directly to the government offices. They feel nervous and even irritated when compelled to submit online applications mainly related to pensions, government certificates etc. They think there are chances to create a lot of mistakes while doing it online, mainly because the whole process is out of their control. It is done by 'someone else' whom they are unfamiliar with.

The study also reveals that Akshaya/FRIENDS and other digital kiosks only provide the physical infrastructure to access digital technologies. In this way, it significantly

bridges the social and digital divide between rural and urban geography. Still, it often fails to achieve one of its foremost goals, providing digital literacy among the public of all ages through various digital training programs.

Process of Adoption of Digital Technologies among Senior Citizens

Among the internet users, 20 respondents say that they learned to use it by themselves through self-learning. As only a small percentage of internet users (31%) among the selected samples use their own, the responses made by the mobile users (83%) give a clear picture. For them, a family member (42%), who may be their children or grandchildren, teaches them how to use these technologies. Also, 55% depend on their children for support and clarification while using these technologies. 29% rely on their grandchildren.

These figures clearly state that the older generation depends mainly on, the younger generation (2nd or 3rd generation) regarding every aspect of the usage of digital technologies ranging from the learning process to the clarifications of ongoing doubts to seeking helps to solve unexpected problems. The aged population have no 'inferiority complexes' in seeking help from the younger generation. They are highly comfortable in doing so.

The study reveals that situational pressure or some unavoidable circumstances (67%) compelled the aged population to adopt/use digital technologies. The self-willingness/curiosity to explore new technologies (22%) and the consciousness of social status (11%) have only a minor role in adopting digital technologies among senior citizens. Here adoption takes the form of compulsion. Technological innovations and advancements may go unnoticed among senior citizens if they seldom need to use them or find any alternative to overcome that situation, which may go in phase with their traditional way of doing things. Thus, the study reveals that necessity is one of the prime factors determining the adoption of digital technologies among senior citizens.

Coping with the Adoption of Digital Technologies among Senior Citizens

In the study, 76% of the respondents reveal that they feel a specific type of fear while using digital technologies. This fear is primarily related to the difficulty in coping with the speed that these technologies demand. The study also reveals that these difficulties and anxiety can gradually be converted to technology fear and will lead to an aversion to technology among senior citizens. Many respondents believe that they will make mistakes while using these technologies and that errors will be difficult to correct alone.

A considerable majority (56%) are not much confident enough to use digital technologies on their own. The study also reveals an interesting fact. Though a large majority of the sample population have a specific type of technology fear, 58% respond that they feel these technologies/devices are users friendly, i.e., they are easy to use if learned. It is a contradictory statement, which indicates that there may be some psychological reasons (fear) that go beyond user-friendliness (ease or difficulty in using devices), which prevents senior citizens from adopting/using digital technologies/devices. If they may get mental support from somebody, especially from a peer group, friends or a family member, they may at least make an effort to trail it.

55% of the sample feels that it is challenging to keep up with technological changes. Only 39% believe that these technologies are making their easier. The rest of the sample, 6% reveals the general mentality of the aged population related to this topic; they are not bothered about these changes. They never even tried to adopt digital technologies, so they don't know how their life will be changed if they use these technologies and therefore, they are not bothered about it. This is the same for both men and women, for rural and urban. Thus the study reveals that digital technologies are not able to enhance the quality of life of senior citizens

Participation in Social Networking Sites

The study reveals a critical aspect regarding the internet usage of senior citizens. 83% of the total samples do not have an account on social networking sites. Those with accounts on any social networking site (17%) believe it is an effective method of building contacts and relationships (70%). Indirectly it reveals that they are trying to deal with the social alienation posed by old age. But it is not the case for the majority. They have their traditional methods of building social contacts, which they are familiar with, other than using social media. Those who use social media know how to make posts, comments etc. That means they have sound knowledge regarding social media usage.

Thus, the study reveals that senior citizens show lower levels of participation in social networking sites. They haven't yet explored the scope of this media platform to engage in day-to-day issues.

The Extent of Using Online Banking Facilities

The majority of the sample (73%) had never used online banking facilities at least once. 46% point out lack of knowledge as the most crucial factor that prevents them from using online banking facilities. 'Lack of need' (22%) is also a significant factor in this context.

At the same time, 63% have ATM cards. Though this figure is high, the reality is that most of them had never made use of it. They all find it comfortable with direct transactions with the bank. The majority of senior persons are included in government pension programmes, which may be the main reason of this. These pensions are their primary source of income and the only form of financial transactions they require. Most of the time, it is available as a money order, or they may go directly to the bank to collect it. They find walking a few miles to the bank easier than to the Akshaya centres for online transactions. Online banking and ATM cards will only be possible if their bank accounts have an adequate balance. All these factors and the lack of knowledge make them reluctant toward online banking.

Thus, the study shows that there is the need for systematic planning and implementation of strategies primarily focused on creating awareness among senior citizens regarding online banking and thus making them confident to use it by teaching digital knowledge.

Barriers to Adopting/Using Digital Technologies among Senior Citizens

The survey shows that the lack of digital skills (49%) and technology fear (17%) acts as the most critical barriers to the adoption /use of digital communication technologies. Simply providing physical infrastructure does not entirely deal with bridging the digital gap. People need digital skills too. Only 8% believe lack of access to technology will be the most critical barrier to using digital technology. Psychological factors like 'feeling too old' also have a significant role to play here. Some seniors have the feeling that they are too old to catch up with these trends, and it is too late to learn new technology. Thus, they find it better to avoid these technologies. They firmly believe that something 'new' is not for them. Thus, the study reveals that along with a lack of digital skills, the individual's attitude towards technology has a vital role in the acceptance/rejection of that technology.

Observations

- Digital literacy among senior citizens is low, though they are gradually beginning to use these technologies for various purposes, even in a slow phase.

- Age acts as one of the crucial factors in determining digital literacy.

- Traditional literacy may have an impact on digital literacy.

- The aged population mainly uses digital communication technologies for utility purposes rather than for entertainment or as a source of information.

- Senior citizens tend to adopt digital communication technologies because of situational pressure or some unavoidable circumstances.

- Senior citizens often seek the help of the younger generation regarding technology usage and depend on them to acquire digital skills and digital knowledge without any embarrassment or inadequacy.

- The lack of digital skills and technology fear poses a big problem for senior citizens in adopting and using digital technologies.

- Senior citizens show lower engagement and participation in social networking sites.

- E-governance initiatives adopted by the government compelled the senior citizens to use the internet for a variety of needs, but they will not prefer these services over other traditional methods which they had been practising for years

- Senior citizens prefer traditional media for reading newspapers and books and watching movies.

- E-mail cannot be considered a common form of correspondence among senior citizens.

- Akshaya/FRIENDS centres only provide the physical infrastructure for accessing digital communication. It is a failure in sectors like providing digital literacy through training programs and thus bridging the social and digital divide.

- The lack of knowledge, lack of need and the fear of using the technology make the senior citizens reluctant towards online banking facilities.

- Senior citizens find it difficult to keep up with technological changes.

- Necessity is one of the prime factors behind adopting digital communication technologies.

- Technological innovations may go unnoticed among senior citizens if they seldom find any need to use them or if they find any alternative to overcome that particular situation.

- Most senior citizens feel that they are too old to catch up with trends and perceive that these technologies are 'not meant for them.

- Senior citizens may see some benefits of using digital technologies among other people, but they may not feel it is necessary for them at this later stage of life.

- Advertisements and other promotional programs for digital technologies/devices create an impression among senior citizens that these technologies are exclusively meant for the younger generation.

- Moving government services online without support makes it harder for senior citizens to use them and thus leads to increased dependency.

- Older men are more likely to use digital communication technologies than older women.

- The social and digital divide is firmly evident in rural and urban demographics of the aged population.

- There is a strong feeling among senior citizens that using digital technologies is very much outside their comfort zone, and it is an unsafe place to stay.

- There is a top notion among senior citizens that they are not missing out on anything by not using digital technologies or not being online. They are well satisfied with their current life as it is going, and they are unable even to imagine how their life will be changed if they start to use these technologies.

Discussion

Every form of communication technology can be strongly linked to the corresponding generation. Adopting new technologies is also required to learn new skills and alter some of the usual procedures. Offering the bare minimum of facilities and resources does not guarantee they will utilise them effectively; instead, they may be unable or unwilling to do so. Effective use requires not just sharing information but also adapting that technology to the user's needs.

The study reveals that senior persons have poor digital literacy and technology use levels. One crucial factor in determining digital literacy is age. Senior citizens frequently turn to digital technologies to overcome situational pressure and deal with certain unavoidable conditions. They are therefore compelled to do so. They are not wholly willing to do it on their own accord most of the time. However, it is worth mentioning that the initial use of technology based on situational pressure cannot be co-related with adopting that particular technology. It is different. The study highlights various elements that serve as facilitators and obstacles to the senior population's adoption of technology.

Facilitators of Digital Technology Adoption and Usage

A variety of facilitators influences intentions and actual technology use. The highest rated facilitator for older persons' digital technology usage and adoption is the necessity/requirement or the unavoidable circumstances compel them to use new technology. The perceived use of these technologies in their daily lives is a significant additional aspect. This perceived usefulness might also include perceived ease of use and perceived simplicity of technology understanding and comprehension. This finding is consistent with many earlier studies, which state that perceived usefulness and ease of use had an impact on users' intentions to use (Venkatesh et al., 2012) and actual use (Chen and Chan, 2014).

The confidence in one's ability to learn the technology was a common predictor of readiness to adopt. Across all technologies, it was discovered that confidence significantly correlated with the desire to adopt. According to studies by Czaja et al. (2006), older persons generally report less confidence in using technologies than younger age cohorts. This lack of confidence can be a significant obstacle to successfully using or utilising technology (Siren & Knudsen, 2017).

Intentions to use are influenced by facilitating factors (such as instructional support) and a social component. The vast majority of older persons acknowledge that they require help to learn how to use modern technologies. They find it difficult to pick up these technologies on their own. The majority of participants received family assistance in terms of instructional support. Children and grandchildren mainly act as mentors. Through their informal guidance and encouragement, they served as intermediaries between the technological artefact and the user, enabling affordances to emerge. But diverse approaches to the applications of digital technology reveal generational gaps. Although older persons typically use technology at a lower rate than the general population, once they become comfortable with the tools, they prefer to use them frequently and believe they are essential to their daily lives.

Their presumptions about ageing and technology were quite evident throughout the study, especially regarding self-efficacy and confidence. According to the study, various adoption-related variables changed depending on the particular characteristics and functionalities of the technology. This could explain the fact that senior citizens favour some technology over others. Anxiety, attitudes, self-efficacy (Chen and Chan, 2014), hedonic motivation, perceived benefit, price value (Venkatesh et al., 2012), and other elements that have an impact on the core facilitators, intentions, and actual usage. Participants in this study largely agreed on these facilitators, but their relationships varied between technologies.

Barriers to Digital Technology Adoption and Usage

Lack of digital skills and technological anxiety were the barriers that received the most support throughout this study. Although older individuals may be aware of their digital technology's features or capabilities, they cannot access or use them. They look for instructional support to help them overcome their phobia of technology. Therefore, confusing instructions or the absence of facilitating conditions may lead to resistance from the senior citizens regarding the technology adoption. Many technologies are built to be multipurpose or have different characteristics in addition to their primary function. Therefore, it is not unexpected that some older citizens were unaware of all the features of their digital devices. Older persons also care about the cost of digital technology and their ignorance of technological characteristics (Vaportzis et al., 2017). Privacy issues significantly deter those who do not adopt digital technologies. Privacy concerns are a significant hurdle for older persons due to the increasing likelihood of personal data being accessed without consent or knowledge (Fox & Connolly, 2018). Feeling too old is one of several psychological reasons that can prevent senior citizens from adopting new technologies.

Conclusion

It is essential to understand how older people learn and adopt new digital technology to address digital inequalities in later life, particularly in the context of an ageing population on the rise. This requires paying attention to their socio-technical contexts, previously acquired habits, and current attitudes. Various mediations are seen to pass between technology and its user instead of being an instant encounter. Though they are eager to learn how to utilise the digital tools that others in their networks frequently use, older people often find that their efforts are foiled—either by internalised ageism or by tools that seem to have been designed with others in mind. The perceived value of the technology, trust in one's ability to learn the technology, and the perceived impact on quality of life are all elements that influence older persons' readiness to accept it.

The social circumstances in which technology is used impact everything, from the designers' envisaged users to the technology's applications by the users themselves. This embedding also shows how things that help with learning may get in the way. A comprehensive digital inclusion policy must consider various socioeconomic settings and refrain from becoming "one-size-fits-all." It is vital to provide age-friendly design, the relevance of digital services, and ageism-free, moral, secure, and embracing digital environments that welcome the diversity of ageing populations. For instance, digital literacy programmes aimed at older audiences should consider both the individuals' needs and goals (personalisation) and their social surroundings, such as living conditions or interactions within the family (contextualisation). However,

use over time is necessary to understand the benefits of technology and make decisions regarding its adoption.

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