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Digital (Dis)Engagement in Older Age: Determinants and Outcomes

Abstract

Information and communication technology (ICT) hold the promise of improving the quality of life of older people and of increasing the accessibility of public services for them. The chapter aims at distinguishing the predictors of ICT increased or decreased use specifically for older adults and outlining the potential outcomes that it can bring. To achieve it, the concept of digital (dis)engagement is viewed in relation to the non-digital engagement, the concept of digital divides is defined and the literature on digital divides predictors is reviewed. The discussion section states the gaps in literature and possibilities for future research.

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Digital (Dis)Engagement in Older Age: Determinants and Outcomes

Engagement in the Digitalization Framework

The concept of engagement of older people has been approached from different angles, such as social, economic, political, or civic engagement (Serrat et al.; Hajek et al.; Loretto and Vickerstaff). During the last decade, various dimensions of this concept have been extensively studied concerning Internet and online participation (Damant et al.; Schreurs et al.).

In the age of increasing digitalization, the Internet constitutes a medium that enables or limits the access to essential goods and services, either opens up new opportunities or narrows them down and hence makes people engage or disengage in one sense or another. Having a connection to the Internet and being able to use it may influence the ability to exercise the fundamental rights of a citizen. For example, online voting systems have been integrated by many governments across Europe and beyond (Manoharan). Various forms of electronic participation (or e-participation) including online discussion forums, electronic polls, and electronic juries, have also been adopted (Manoharan 124). Being able to use the Internet and information and communication technology more generally can determine the level of civic participation (Jamal et al.).

Regarding the social aspect of engagement, interpersonal relationships and networks in the contemporary world are intertwined with digital technology in countless ways. For personal communication, people often use WhatsApp and other Internet-based video calling and instant messaging applications. In a broader sense, communication within the social communities, social groups or groups of interest increasingly happens through social media platforms such as Facebook, Instagram, Telegram, Twitter etc. Thanks to the great penetration of technology and the Internet into social life, communication can happen across the distance, which is a substantial benefit for those engaged in ICT. It was studied, that involvement in information technology use enhances social engagement in both formal and informal settings (J. Kim et al.). Such an opportunity for higher social engagement is especially relevant for people in their pension age and other potentially vulnerable population groups such as minorities or those with limited mobility (Warschauer).

The aforementioned aspects of older people's engagement are highly related to the extent to which one is involved in ICT use. Differential inclusion of various population groups (including age groups) has been at the focus of attention in many studies on digital divides (van Deursen and Helsper; Ragnedda and Muschert; Friemel), digital inclusion (Matthews et al.), digital engagement (J. Kim et al.), technology and Internet usage and acceptance (Cotten et al.; Chou et al.), and so on.

In many of those studies, it was shown that the Internet and ICT use decreases with age (Matthews et al.; Friemel), which is the central topic of this chapter. The significance of such studies can be underlined by the global trend of ageing, in 2017 there were approximately 962 million of people aged 60 and over in developed as well as developing countries (United Nations). This figure has doubled since 1980 and is projected to continue growing steadily and reach the number of 2 billion by 2050 (United Nations).

Older people engagement in a digital sense has a wide range of positive potentialities. Growing literature provides evidence that ICT use correlates with the better quality of life of older adults (Damant et al.; Chou et al.; Hajek et al.). The studies examining the intersection of quality of life and online participation do not provide univocal findings, however, the benefits of online engagement are noticeable. The positive impact of ICT use include better control over life, independence, reduced isolation and increased social connectedness to friends and relatives, higher access to electronic services (e-health, e-government), information and learning, positive physical and mental health outcomes, as well as better chances to find employment or volunteering opportunities (Damant et al.; Hajek et al.; Chou et al.).

Considering all the positive impact that ICT can bring into the lives of older people, this chapter aims at distinguishing the factors of lower or higher Internet and technology use and their relation to age and ageing. In addition to that, it also aims at outlining the possible consequences of older adults' digital (dis)engagement. To achieve that, the literature on digital divides and its determinants is reviewed. In what follows, the digital divide concept, its levels, and the diversity of its predictors will be delineated. After that, the potential vulnerabilities that the digital inequalities can produce for the group of older people will be discussed. The chapter is summed up in the discussion section where the possible directions for future research are stated.

Levels of Digital Divide

In the research on older adults' ICT use, different bottom lines have been included such as 50+ (Matthews et al.), 55+ (Gracia and Herrero), 60+ (Fernández-Ardèvol), and 65+ (Friemel). Categorizations of the generations of ICT users, such as digital immigrants vs digital natives (Prensky), or those born before the 1980s and after, proved to be inappropriate, because, similarly to distinguishing between the "old" and the "young", the natives versus immigrants division "makes us overrate the difference between generations and overlook the diversity within them" (Taipale 83). Thus, this chapter does not differentiate between the generations of Internet more or less proficient users, nor it assumes that all older adults are necessarily inept Internet users. The argument in it is that many comparative studies have shown that the use of the Internet and technology decreases sharply with advancing age (Gracia and Herrero; Friemel) and that older

people are commonly characterized as late Internet and technology adopters (Fernández-Ardèvol; Gracia and Herrero).

The gap between the benefits that the Internet can potentially bring into the lives of older adults and the actual level of their ICT use remains high even in the more recent studies (Damant et al.; Matthews et al.). This phenomenon is usually called *the digital divide in age*. Digital divides may be in age, education, income, employment status, which means that all those demographic variables can have a strong impact on the access to the Internet, information and communication technology. The digital divide is defined by Manuel Castells (2001) as inequalities in access and use of ICT, mostly the Internet. For example, the new electronic devices or paid computer software may be unavailable for those with low income (Friemel).

The studies of digital divides used to examine just the physical access to ICT infrastructure, viewing the inequalities related to using or not using the Internet. Later on, when the access to the Internet has become almost universal and simply having a computer and Internet connection at home was no longer a problem (in most of the developed countries), this dichotomous understanding of the digital divide has changed (Dijk). It has become clear that merely having the device with Internet connection does not necessarily allow people to use them (Bakardjieva). Therefore, the digital divide was “divided” into two levels; the first, which is about the physical access to the Internet and computers, and the second, which concerns the ICT skills and different patterns of Internet and ICT use (Dijk).

Research on the second level of the digital divide is focused on various levels and typologies of skills required for ICT and Internet use (van Deursen and van Dijk), different sorts of activities people perform online (Blank and Groselj) and how these aspects intersect with each other (van Deursen and Helsper). This brings a more nuanced view on the Internet and ICT adoption not merely as an absolute use or non-use, but rather as a gradation or a scale based on measurement of time spent online, considering its various usage purposes.

The evolution of the research on digital divides did not stop at defining the two levels of it. Fairly recently, the third-level digital divide was introduced in the studies of ICT use (van Deursen and Helsper). This research draws attention to the disparities in outcomes that Internet users with similar usage habits have. People who exercise relatively autonomous and unlimited access to the Internet may have seemingly different offline returns of their Internet use. Thus, the third level of the digital divide concerns the capacity of an individual to transfer the ICT access into the outcomes that are valuable offline. Studying it may uncover who benefits in which ways from Internet use and why (van Deursen and Helsper).

The previous section of the chapter (Engagement in the digitalization framework) included an example of the digital divide in the outcomes, regarding political and social participation. Having a

device at home and sufficient skills for using it does not mean that a user will acquire greater social capital or be politically active. The research connecting specific digital engagements with specific spheres of life should be done (van Deursen and Helsper), rather than taking for granted that Internet users who are richer, younger or more skilled in ICT will undoubtedly gain greater returns from it in their “real life”. This paper has a focus on older people and it will further elaborate mostly on the second and third levels of the digital divide determinants and outcomes in the following sections.

Determinants of Digital Divide

A myriad of studies has been conducted to find the factors that determine the digital divide. To better understand why older people go online less than others (even having access to the Internet), diverse socio-demographic factors have been considered. In addition to age, other predictors such as gender, marital status, educational level, income, job experience, place of living (urbanized or rural, population density), social isolation, self-rated health, health literacy, migrant status and many other factors have been studied (Friemel; Scheerder et al.; Estacio et al.). Those determinants have been viewed in various contexts and were shown to be more or less strongly related to the use of the Internet.

In an attempt to structure the determinants, the theories of technology acceptance and use were invented: Unified Theory of Acceptance and Use of Technology (UTAUT and UTAUT 2) (Venkatesh et al.), Model of Adoption of Technology in Households (MATH) (Brown and Venkatesh), Technology Acceptance Model (TAM), and many others.

Other theories were applied to the research on digital divide determinants that proved to be relevant, essentially Pierre Bourdieu’s Practice Theory. The research conducted in Singapore, for instance, found that not all forms of capital have a similar impact on the access and use of ICT by older adults (Tan and Chan). Firstly, the cultural capital, that includes all the pre-existent knowledge of a person such as education, language skills, his manners and behavioral patterns, together with economic capital, which is income and employment background, play a significant role in the adoption and use of ICT and the Internet. For instance, low level of English language skills can create fear in front of new technology, since most of the ICT, as well as many websites, are in English by default (Tan and Chan). Similarly, employment in low-paid jobs (currently, or previously) can result in increasing concern about the cost of new technological devices that also produces an adverse effect on the ICT and Internet take-up (Friemel; Tan and Chan).

Unlike the cultural and economic capital forms, the social capital has an ambivalent impact on the access and use of ICT and the Internet. Having a family member or friend at hand in one case would facilitate the learning process of older adults, provide information, social credentials,

reinforcements for ICT use (Warschauer; Tan and Chan). In another case, close ones can discourage the adoption of ICT and Internet deeming their ageing parents, counterparts or acquaintances incompetent and telling them that they “might end up damaging the ICT devices” (Tan and Chan 127).

Health-Related Determinants

The growing literature on predictors of the digital divide in age focuses on health-related barriers. Parameters such as self-rated health (Estacio et al.; Gracia and Herrero) and various mental health indicators (Forsman and Nordmyr) have been studied in relation to different online services and electronic devices usage. According to Gracia and Herrera (2009), who conducted a nationally representative survey in Spain, those with poorer self-rated health used Internet much less; and this relationship remained statistically significant even after taking into account other factors, such as gender, age, and marital status. A similar tendency has been observed in relation to depression (Bauer et al.), social isolation, anxiety, and stress (Forsman and Nordmyr).

Disability as a factor of digital disengagement has been less studied, as this social group is difficult-to-reach with large-scale surveys (Scholz et al.). Researching the digital engagement, it is especially important to consider those groups of population that are most vulnerable, and in need of social and health care. As mentioned before, the Internet provides tools for greater social inclusion, which can be crucial for those with physical or mental impairment, opening up not only the access to a wide range of boundless electronic services but also communication channels. However, existing studies on ICT use demonstrate that disability, especially visual and mobility impairments, constitute a strong predictor of lower Internet and technology use and non-use (E. J. Kim et al.; Lussier-Desrochers et al.; Scholz et al.).

Migrant Background, Race and Ethnicity

Race, ethnicity, and migrant background can also be determinants of ICT and Internet adoption and use of ICT in general. According to Haight et al. (2014), people from a migrant background on average have lower education levels and lower income in comparison to the settled majority population, which together with poorer local language skills can put them at risk of the digital divide. In many other studies, language appears as a significant barrier of ICT access in regards to adoption of local digital services and information seeking (Gonzalez et al.; Ono and Zavodny; Mossberger et al.; Tan and Chan). Command of language of the country of settlement is decisive in determining the online participation, including economic and political participation, access to public goods, online activities related to health, education, housing, government services

(Mossberger et al.). Language can increase economic opportunities online and democratic participation that are essential parts of the integration process (Mossberger et al.).

On the other hand, several US and Canada based studies have found that migration experience can be a strong motivator to Internet adoption (Acharya; Gonzalez and Katz). It was found that Internet use for communication purposes is higher in some contexts among the immigrant groups than among the local population (Gonzalez and Katz). In addition to that, migrants may use Internet more to compensate for the lack of social networks in the new society during the assimilation process. Furthermore, Khvorostianov et al. (2012), who studied Former Soviet Union older migrants in Israel, argue that Internet adoption was motivated by the desire to keep contact with the family and friends that were left behind, and by the willingness to maintain previously acquired identities. Internet was not only the means to keep their professional identity but it also helped migrants to develop new opportunities in Israel (Khvorostianov et al.). Migrants did not have previous experience using ICT back in their home countries, however, they were motivated to learn to use it in a wide variety of ways, e.g. for managing health or leisure activities (Khvorostianov et al.).

Ethnic and national minorities studies demonstrate the existence of similar barriers to access the ICTs typical for migrant populations (Mesch; Mossberger et al.), e.g. lack of social networks and lower economic status. However, national minorities such as African Americans in the US would not experience language difficulties, as they constitute a settled community without recent migration experience (Mossberger et al.).

Motivation-Related Determinants

Socio-demographic factors provide a broad picture of digital engagement determinants; however, they do not capture all sides of it. Grates et al. (2018) argue that ICT use may be a personal decision, based on one's preference and motivation. For example, perceived usefulness and ease of use of the device or certain online service may motivate or demotivate older people to use them. Several studies have come to the conclusion that lack of awareness about the functions of and lack of interest towards the technology of one kind or another leads to lower acceptance and use of it by older people (Lee and Coughlin; Merkel and Enste). Studies from the field of social psychology define the issues of technophobia (fear of technology), computer self-efficacy (confidence in individual capability to use ICT), lack of trust in technology that can discourage people, especially older adults, from using the Internet (Beldad et al.; Vaportzis et al.). Proposing recommendations for developers, Merkel and Enste state that technology needs to focus more on the users' characteristics, their needs, and preferences to enhance their acceptance.

Digital Disengagement Producing Vulnerability

In this article, age is viewed in relation to other determinants due to its particular importance. Many of the digital divide predictors are oftentimes accumulated in the group of older people producing multiple intersectional vulnerabilities. Commonly characterized as those who learned to use the technology at the later stage of their life, older people are generally considered to have lower computer skills (though it is not always true). Apart from that, an ageing population may experience a decline of income due to retirement and decline of health, regarding the higher probability of having a chronic disease and disability (Bauer et al.; Gracia and Herrero). All those factors, as discussed earlier, influence the Internet and technology use negatively. Given the increasing loneliness among older people (Cotten et al.), the problems of lacking social capital and social isolation add up to the risk of being digitally disengaged. Furthermore, insufficient trust, prevalent skepticism, and negative attitudes to technology peculiar to older generations (Vaportzis et al.) may also undermine the motivation to adopt new technologies. Thus, a great number of socio-demographic and socio-psychological risk factors of digital exclusion are accumulated together and amplified in the group of older people.

Returning to the discussion of the third-level digital divide, increasing evidence suggests that lower participation of older adults in Internet-based services results in a wider problem of their social and economic exclusion (Neves and Amaro; Niehaves and Plattfaut) as well as the problem of their limited access to public services. EU eGovernment Action Plan sets the aim of making the public services in European states “digital-by-default” (European Commission). The new online forms of service delivery are replacing the traditional face-to-face services, for example, to claim the social benefit, one would need to fill the online application instead of physically meeting an authority.

The intention to make the public services more accessible through Internet presupposes that the citizens have enough competence for and access to digital technologies’ use (Olsson and Viscovi). Therefore, older people might find themselves in a vulnerable state being unable to use, for example, health and care services. In the context of raising care needs by the ageing people, the question of their access to the health and care services has an increasing societal significance. In their systematic literature review, Chesser et al. (2016) state that many studies on underserved populations found older people to be among the most excluded groups regarding the e-health (for instance, patient-physician communication applications for smartphones, seeking health information online) services. Therefore, a sort of paradox emerges that those who are potentially most in need of public services – older people, are the most excluded from them in the age of digitalization.

Discussion

Reviewing the digital divide factors helped to recognize that ICT use is influenced by various predictors and that age is among the most significant ones. Ageing people, even though they do not constitute the homogenous group of people, might be at great risk of marginalization regarding the technology and Internet use and therefore, the electronic public services. The essence of this risk is also in the high probability to miss out on the benefits that ICTs may bring to older adults' lives in contemporary digitalized society.

Bringing up the problem of older people's poor access to digital services draws attention to the lack of scholarly research on intersectional vulnerabilities that this group of population faces in using various Internet services. The questions of how older people use digital care, health, and governmental services, how do they manage to access the services by themselves, how do they get help with them and where from, are yet to be studied considering the multiple disadvantages that older people may have.

Most of the factors described in the chapter (with few exceptions) have unambiguous effect on the Internet and technology adoption and use: similarly, to the lower education and health status that are generally considered to hamper it, lack of computer self-efficacy, trust in and knowledge about ICTs preclude the digital technology and the Internet effective use. However, more attention should be paid to the fact that many of the determinants are more complicated and may produce negative as well as positive outcomes.

While describing the potentially most vulnerable groups or groups at risk of digital exclusion, the migrant population could be further discussed. Some large scale studies on migrants, racial and ethnic minorities regarding older age have been carried out (Mossberger et al.; Mesch; Jamal et al.), however, almost no nationally representative research is done on the older migrants' access to the Internet and ICT and their use of electronic public services. It was not at the center of the interest of this chapter, however, it is a promising topic for future research. Migrants' difficulties with the local language, lack of knowledge about the country of settlement and its welfare system, poorer social and economic capital can be significant disadvantages for them, especially combined with older age. This may create risks of lower digital and social inclusion as well as impede the integration process in the new country.

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