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DIGITAL EXCLUSION OF OLDER ADULTS**

Ageism is a particular form of discrimination, in which individuals are judged according to age-based stereotypes, or views on what people should be doing, experiencing, or feeling depending on their age. One of the important dimensions of age discrimination, which is the subject of this paper, is the lag in using digital technology - characteristic of the older population. Older adults as a group are on the negative side of the digital divide. As the use of digital technology becomes more widespread across the globe, older people remain among the group with the lowest access and usage. Lower use rates of computers and the Internet among older adults have important social consequences. As the Internet becomes more integrated into everyday life, people who do not use the Internet are more likely to become more disenfranchised and disadvantaged. Recent reports from the International Telecommunication Union indicate that older people are at the highest risk of digital exclusion due to disabled or difficult access to the Internet, economic difficulties, lack of skills, lack of self-confidence, fear of Internet safety (cybercrime and misinformation) and lack of motivation (some people do not see why would be useful for them to use the Internet). In addition to the mentioned difficulties, there are other barriers, such as inadequate design of digital services - not all digital services are adapted to this group of users. Existing research documents the characteristics of older people that affect their participation in digital practice, and they are made up of both objective characteristics related to older age and stereotypes that close the circle of digital exclusion of the older population. The digital divide arises as a consequence of a lower level of computer literacy, technophobia, lack of perceived usefulness, and physical and cognitive deficits that must be overcome by applying a multidisciplinary approach.

Keywords: Ageism, older, adults, digital, internet, exclusion

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Introduction

Discrimination against the older adults has historical, cultural and social variations according to diverse forms and meanings of their authority and status in different societies. However, the status of older people and attitudes toward them are not only rooted in historic and economic circumstances. They also are derived from deeply held human concerns and fears about the vulnerability inherent in the later years of life. Such feelings can translate into contempt and neglect (Butler, 2009). Ageing can be defined from chronological, physiological and social aspect (Batrićević, 2022:464). Recognizing discrimination connected with age, Robert Butler coined the term “ageism” (1968) to describe systematic discrimination against older people. Although he equated age discrimination with gender and racial discrimination, ageism remained the most invisible form of discrimination and has received the least amount of attention. Like gender, ethnicity, or class, age is an aspect of social structure that “involves differential (and sometimes discriminatory) treatment” (Brah & Phoenix, 2004:81). Stereotypes which contribute to age discrimination define older people as a homogenous group by ignoring their habits, experiences, values, opinion, aspirations and circumstances. Such stereotypes usually work unconsciously (Ayalon & Tesch-Römer, 2018).

Older adults may have experienced different forms of ageism which would exert various influences on them. It could divide ageism into two forms, namely, benevolent and hostile ageism. Benevolent ageism refers to the overwhelmed empathy and pity concerning older adults. This often leads to unwanted help (for example, providing extra but unnecessary medical treatment to older adults) which can lead to decreased self-esteem, as well as motivation and confidence loss for older adults (Baltes & Wahl, 1996; Hess, 2006; Hehman & Bugental, 2015 according to Chen & Zhang, 2022). Unlike the benevolent one, hostile ageism always refers to more aggressive and drastic attitudes.

Ageism is a form of discrimination that demands an intersectional approach in which there are particular consequences when two or more forms of discrimination interact. Conceptualizing discrimination based on a single attribute in isolation hinders our ability to respond effectively (Australian Human Rights Commission, 2018)¹. Examples of intersectionality include age and disability, age and race, age and gender, age and social economic status, age and ethnicity. Age discrimination as well as other forms of discrimination are closely related to social exclusion. Social exclusion has multiple harmful effects on the well-being of individuals and society. People are deprived of not

¹ Human rights are based on the idea that all human beings have universal natural, inalienable rights (Mršević, 2022:110).

only living well in the present, but also unpredictable long term effects can be seen due to age discrimination.

Technology as a concept can be generally defined as any electronic or digital product or service. To be able to predict technology usage is important to understand the factors influencing older adults acceptance and adoption of technology (Mitzner et al., 2010). The impact of technology can have differentiating results for the older generations. In regards to age discrimination, digital technology can increase the exclusion of older people, but also it can significantly improve different and very important aspects of their lives. At the same time, technology may be considered as having the potential to affect ageism—both by fostering the perpetuation of ageism and by acting as a force contributing to the weakening of ageist views (Cutler, 2005:67). The aim of the analysis is to enhance the need and right for older people to be included in the development of digital technologies. This will then lead to a more informed older generation that is educated, and able to overcome the stereotypes of digital usage habits.

Advantages of technology and older adults benefits

Digital literacy is a basic element in the development of each individual, because it enables the inclusion of these individuals in a more participatory way. For this reason, some countries are interested in increasing the digital competencies of older adults because it provides them a series of advantages and benefits on a personal, social and societal level (Todorović et al., 2019:2). There are numerous ways in which technology can be beneficial to older adults and much has been written on this topic. Technology applications can improve access to care and support, information, safety, and social connectivity, as well as provide venues for productive engagement (Czaja, 2019). An AARP report showed that older adults are willing to use a wide range of technologies to maintain social connections, “gather information, be safe at home, and promote their personal health and wellness” (AARP, 2008:1) if these technologies allow them to remain independent. Technology can support many home-based tasks such as cooking, cleaning, and yard maintenance. In addition, technology items such as cell phones and medical alert systems can be lifesaving when in need of immediate help. Older adults do recognize the potential of technology to facilitate independence (Mitzner et al., 2010). Several investigators note that the use of assistive devices has increased while the prevalence of chronic disability has declined (e.g., Russell et al., 1997). By fostering effective functioning, images of older adults as frail, housebound, and bedridden are challenged and potentially replaced by far more favorable views (Cutler, 2003:60).

Growing trends of technology usage in computer-related professions are relevant for older adults because workers are remaining in the workforce longer by either delaying retirement, starting a second career, or working on a volunteer basis. The US Department of Labor Statistics (2008) demonstrates that older adults participation in the workforce is increasing dramatically (Mitzner et al., 2010). Numerous studies have demonstrated that older workers are both willing to learn how to use new technology and capable of acquiring the needed skills (Czaja, 2001). The multidisciplinary interplay between technology and successful aging can be classified into two categories of technology use among older adults: technology that targets the overall population and assistive technology, for older adults with special needs (Wu et al., 2015 according to McDonough, 2016). “Positive technology” (Botella et al., 2012; Riva et al., 2012) and human computer integration promote active life and may have a benefit for health and wellbeing (Calvo, 2006). To remain active, competitive, and useful in the workforce, older adults must use and learn to use technology. Human being is influenced by the idea of certain purpose or have to be seen as a purposive being (Stevanović,2022:30). Except impact for safety, security and decreasing risk of hospitalization, technology have aspects that support people to live well and experience the things that make life worth living, providing older adults with meaningful and engaging activities that are stimulating (Astell,2013). Playing computer games has a range of benefits for older people, including the recreational pleasures of satisfaction and accomplishment which positively influenced people’s view of themselves and their abilities. Physical and cognitive benefits of computer games enhanced motor skills, such as hand-eye coordination and manual dexterity, increased speed on the games played plus anecdotal evidence of these skills transferring to other aspects of people’s daily lives, such as driving (Whitcomb, 1990 according to Astell, 2013).

Technological necessity

On average, people around the world are living longer. In 2020, 727 million persons were aged 65 years or older, and the population aged 65 years or over is projected to double to reach over 1.5 billion by 2050, a 16.3 per cent increase. Unfortunately, half of the global population still lack access to the Internet (World Economic Forum, 2021). Technology can improve the quality of life for an older adult in a way that improves work to alleviate the circumstances related to illness, disability or physical and mental weakness. However, the process of implementing technology in the lives of older adults makes technological literacy necessary. Older adults desire the addition of new technology into their lives, and look forward to using the new technology to make

their lives easier. Many services are moving towards digital platforms including banking, pension, old-age benefits, TV services, transportation booking etc. Older adults face challenges to use many basic services just because they are unfamiliar with the use of digital technologies (Mubarak & Suomi, 2022).

Digital inclusion, among other things, implies acceptance of the information society (knowledge of the advantages of using computers and other digital devices to access the Internet). With this acceptance there will be easy and free access to the Internet which will enhance digital literacy (understanding the use of information and communication technologies and their active use in order to perform daily activities, education, information, entertainment and general communication) (Todorović, et al., 2019:9). In Serbia, adoption of the Law on Electronic Administration regulates the use of information and technologies in the performance of numerous administrations and other tasks. This includes issuing a person's health card, biometric identity card, biometric passport, vehicle registration, supplementary data in the registers born, married and died, and etc. E-banking provides clients an easier, quick and secure way to make banking transactions. The technology itself must be inclusively designed for everyone, while considering the unique needs of older adults. Ensuring digital inclusion for older adults means access, installation, and the possibility of accessing the Internet. Research conducted in Serbia, has shown that slightly more than half of the older adults over 65 years (53%) use a computer, while slightly less than half use a smartphone (48%). There is a direct correlation between mobile phone and computer use ($\Phi=0.423$). As much as 68% of those who have a computer also have a mobile phone, while 32% of older people who have a computer, don't have a mobile phone. Also, 75% of those who don't have a computer don't even have mobile phone (Todorović et al., 2019:34). The use of e-services is extremely low among older respondents (below 9%). The reasoning by the older respondents for the low usage is as follows: I didn't know how (15.7%), insufficient skills (22.6%), lack of equipment (10%), no Internet access (3.5 %), tried but failed (0.4%), not interested (19.6 %), prefer at counters (24.8%), other (3,4%) (Todorović, et al., 2019:43).

A variety of factors contributes to these technological "divides". Product design and marketing are certainly among the factors leading to differences in access among age groups, but so are costs. Technology can be expensive and beyond the financial reach of many older adults (Cutler, 2005:70). Studies conducted in Serbia confirmed that the use of digital technology is significantly connected with social and demographic factors (Petrović, 2013; Todorović, et al., 2019). In relation to gender, women use the Internet to a greater extent (53.5%) than men (46.4%). According to age, people younger than 30 use the Internet the most (54.9%), and as the age of the respondents

increased, the use of the Internet decreased. Moreover, the majority of Internet users are highly educated people. Also, internet use was more prevalent in urban areas with greater populations (cities of millions); People with higher material wealth use the Internet to the greatest extent (Petrović, 2013:101). Factors that influence digital inclusion among older adults are low material standard, low level of education and place of residence (it's somewhat less closely related to computer equipment but the older people living in rural settlements are the least likely to have computer 11%) (Todorović, et al., 2019:37). The lag in the technological inclusion of older adults in Serbia refers to existing disadvantages, such as economic, educational disadvantages, and the place of residence (different level of development).

Ageism and digital divide

Ageism is a particular form of discrimination, in which individuals are judged according to age- based stereotypes, or views on what people should be doing, experiencing, or feeling depending on their age (Rosales & Fernández-Ardèvol, 2020). Ageism may be directed at people of any age (Bodner et al., 2012). A particular form of ageism is discrimination against older adults based on a view that focuses on disabilities and implies “inferiorization” and “patronage” (Neves & Amaro, 2012: 3). The older population has been portrayed in a variety of unflattering ways as a result of ageism (Cutler, 2005:67). Ageism is reflected in many areas of life, implying deprioritization, disregard, disempowering and exclusion. Ageism shapes both the image(s) that individuals have of themselves and the image(s) that society has of the different life stages (Rosales & Fernández- Ardèvol, 2020). At a societal level, ageism refers to “the way in which society and its institutions sustain ageist attitudes, actions or language in laws, policies, practices or culture” (AGE Platform Europe, 2016). The issue of ageism in the digital space create new form of exclusion – digital exclusion. Digital exclusion prevents individuals or groups from using resources that are sometimes vital to them, thereby causing “multiple deprivation” (Castells, 2002 according to Manor & Hersovici, 2021:1085). Older adults (65+) fall into one of the categories at greatest risk of digital exclusion. If the development of digital technologies will not be taken into account, and the right of older adults to be digitally informed, digitally educated and digitally included, then this group will remain without many rights that belong to them (Todorović, et al., 2019).

Lower use rates of computers and the Internet among older adults have important social and cost ramifications. As the Internet becomes more integrated into everyday life, people who do not use the Internet are more likely to become more disen-

franchised and disadvantaged (McDonough, 2016). The digital exclusion of the older adults is part of a closed circle of ageism, which is based on the idea of insufficient interest, inability and reluctance of said population to accept changes. The inability to become technologically literate, as well as the insufficient importance of overcoming such a conjuncture will not improve the situation. The undeniable relevance of digital literacy, which is a condition for full participation in social life, is faced both with ageist stereotypes and with material, health, family and other aspects of the life of older adults, especially in social disadvantage groups. Too little attention has been paid to tracing a systematic solution to the socioeconomic problem of digital divide (Mubarak & Suomi, 2022). Despite mass diffusion of ICT, marginalized communities continue to suffer from digital division with only rich being insulated from this divide. Additionally, even within individual countries with high levels of computer access there is evidence of a “digital divide” between different regions, areas, and neighborhoods (Harris, Straker & Pollock, 2017). Digital divide affects older people among others excluded collectives disempowering them as a group in digital media and perpetuating the exclusionary stigmatization of older people (Rosales & Fernández-Ardèvol, 2020). There is a consensus among social scientists that the grey digital divide is getting serious with the passage of time (Friemel, 2016). Even in developed countries remarkable grey digital divide affects older adults (Carney & Kandt, 2022). Despite the fact that the digital divide is blurring in terms of access and use, the second digital divide, or the divide in skills, purpose of use and motivation, is persistent or widening. This means that people have access to and make use of digital technologies but have less interest, do it for a narrower range of purposes and with more difficulty (Rosales & Fernández-Ardèvol, 2020). Ageism is a key barrier that affects the design, adoption and use of digital technology occurs on the macro (design and policy), mezzo (social and organizational environment) and micro (individual) level. These three levels also interact and influence each other (Euroageism policy brief, 2020).

A digital divide affected older adults in Serbia in a similar way which resulted in a divide of skills, purpose of use, and motivation in regards to technology. In the recent study, respondents named the following explanations for their hesitation about digital usage: insufficient knowledge about such services, insufficient knowledge how to use them, fear that they will not be able to use and follow all the instructions when using different applications and portals, especially when it comes to “obligations towards the state” - they prefer to give up their obligations and rights directly at the counters of competent authorities, deficiency of digital skills and knowledge, poor financial conditions, the desire to fulfill their obligations directly at the counters because on that

way they have the opportunity to make social contact, talk with each other or with the officials, and thus fill their free time, lack of interest (Todorović, et al., 2019).

Ageism and digital approaches

Ageism is not only contained in the perception of the relationship between the older adults and technology. Technology is created with a reduced appreciation of the needs, affinities and abilities of older people. Ageist mechanisms have been analyzed on the design of corporate digital platforms (Rosales & Fernández-Ardèvol, 2020). The analysis takes into account three factors that foster discrimination on digital platforms: First, algorithms are influenced by the biases of developers, mainly young men earning above-average salaries (Beyer, 2014; Cohoon & Aspray, 2004). Thus, design decisions are strongly influenced by common points of view, falling into homophilic or self-centered ideas. Some of these biases work by making design decisions that are influenced by their common interests and practices, and ignoring the practices of other groups (Rosales & Fernández-Ardèvol, 2020). Second, the research methods commonly used on digital platforms face limitations when considering the interests of diverse groups of users. The failure of big data approaches illustrated the vulnerability of minority or disempowered groups when they are not properly considered in the overall tool design process. Moreover, the likely ageist responses were not studied in this case. By ignoring 28% of the population for whom the predictions are not accurate, the system deprioritizes both less motivated and less skilled users, two aspects that appear to create a bias against older people (Rosales & Fernández-Ardèvol, 2020). Third, digital platforms are supported by corporations, for whom corporate interests take precedence over the general interest. Thus, their algorithms are aligned with their objectives (Cheney-Lippold, 2011) and keeping them hidden helps to ensure that the corporate ideology remains invisible (Cheney-Lippold, 2011). Ageism could be recognized in that hidden objectives. Thus, for the sake of security and/or altruism, CAPTCHAs (Automated Public Turing test to tell Computers and Humans Apart) fall into ageism by deprioritizing the limitations of older people on digital platforms in their corporate decision-making, and by ignoring the ways in which their comparatively limited skills reduce their chances of completing the CAPTCHA challenges (Rosales & Fernández-Ardèvol, 2020). Another example is a fingerprint system which is meant to simplify the user's life by having a more accessible and secure system than passwords thus creates new strands of discrimination. While digital platforms should provide tools for an inclusive networked society (Buolamwini & Gebru, 2018), fingerprint systems reinforce ageism by ignoring the reality of older people (Rosales & Fernández-Ardèvol, 2020). Tracking

systems thus reinforce ageism by deprioritizing the habits of older people in the development of passive metering tools, particularly with regard to the use of basic and older models of mobile phones. They also use voluntary sampling methods that disregard their comparative limited purposes of use. All these factors limit the chances of older individuals participating in studies that make use of smartphone logs (Rosales & Fernández-Ardèvol, 2020).

Digital inclusion for older adults

Despite the digital divide narrowing, it still exists predominantly in terms of age, education levels and income (Euractive, 2005; Zickuhr & Smith 2012, according to Rasi & O’Neil, 2014:55). The digital divide is a multifaceted phenomenon and needs multifaceted efforts to control it, in the same sense, the grey digital divide has to be tackled from multiple perspectives (Mubarak & Suomi, 2022). The grey digital divide is influenced not only by access but a myriad of factors including ICT skills, ability and social support. Findings indicate that older persons tend not to use computers and the Internet since they fail to see the advantage of using online services, are not motivated to learn, and most of them are not familiar with the digital jargon. They perceive computers and the Internet as useless and sometimes even as dangerous and as a threat to their freedom and lifestyle (Hakkarainen, 2012). Furthermore, smart phone usage also declines with age for a variety of reasons, ranging from a lack of interest or a lack of awareness to the advantages such devices offer, to a lack of skills and economic constraints (Hakkarainen, 2012). The economic status as a barrier to adopting and using new technologies does not require a deeper analysis in terms of organizing support in overcoming the technological divide among different social groups. However motivation, attitudes, and social identification of older adults regarding refusal to adopt new technologies demands a more complex understanding of their social position. Aging stereotypes can encourage the self-perception of older adults as a socio-demographic group who are technophobic and unable to learn to use technology. With such attitudes one can see aversion, anxiety and an avoidance to adopt and participate in digital praxis. Older adults have lower self-efficacy regarding computer use and more computer anxiety than younger adults. Moreover, computer self-efficacy has an indirect effect on technology adoption through anxiety, since people with lower self-efficacy have higher anxiety (Czaja, et al., 2006).

From the perspective of social representations theory, social groups are different in terms of their social representations (Moscovici, 2000; Wagner et al., 1999; Bauer & Gaskell, 1999, according to Rasi & O’Neil, 2014:57). The differences can be socio-

structural, historical, cultural/subcultural or intergenerational, or they could depend on the education level (Wagner et al., 1999:100). Social representation of certain groups emerge as a result of their experiential world. Study dedicated to social representations of computers and the Internet by elderly Finnish and American non-users (Rasi & O'Neil, 2014) showed results that calls for awareness-raising activities (e.g. media literacy campaigns, guidance materials, training, support) from industry, governments, educators and non-government organizations. The activities should aim at providing more balanced Internet-related information and altering elderly non-users' overly negative perceptions of the Internet as Tool and Thing, Depriver of Freedom, Danger and Marker of Differences (Rasi & O'Neil, 2014:68).

Significant implications for the understanding of how solving the grey digital divide is essentially a multi-level challenge. Cross-collaboration research efforts among academic–healthcare–industrial discourses are required to design and innovate state-of-the-art digital inclusion initiatives for senior citizens (Mubarak & Suomi, 2022). From an intergenerational perspective, it is of practical importance to develop positive attitudes toward older adults. We must change a culture that fails to take characteristics and needs of the older population into account while creating technology designed and employed so that differences in use related to age are minimized. This further implies that tutors cannot use the same principles and techniques to deliver content to older generation as they do for young generation. Older adults take their own time to learn digital technologies, often need excessive patience, repeated reminders, slower learning, and sympathy of their tutors. The practical implication here is that tutors need to undergo specialized training to deliver digital education to older adults (Mubarak & Suomi, 2022). Potential benefits of technology for older populations can be realized by acknowledging that older people are willing to use technology, and are willing to learn to interact with new technology systems.

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