THE INTERGENERATIONAL DIGITAL GAP WITH REGARD TO SILVER WORKERS

MARTINA PORUBČINOVÁ[1]

Abstract

In this paper, we identify the digital gap among younger and older workers, focusing on the identification of digital silver workers who are ready to participate in digital environment without significant difference to compare to younger workers. Based on analysis of empirical data digital literacy studies, we suppose digital silver workers generation to emerge in Slovakia in period not late than 10 years, when currently generation of 45-54 years old will face the transition to late career life-stage. This period may probably be shortened due to improving and enriching of digital skills among 45-54 years old. We suppose that cultural changes in patterns of retirement and senior life stage also influence trends in human capital formation and exploitation. To the future, the polarization of digital literacy in relation to education and occupation within the particular age can be expected due to different digital literacy requirements in the labor market context, as offline and online sociability overlapping is reflected also in digital literacy development.

Keywords

Digital literacy, silver workers, digital gap, late career

I. Introduction

Various analyses were made in a field of generational differences in personal variables, expectations in work, commitment, job satisfaction, attitudes towards team work, and other work-place indicators. Currently, silver workers share a part of common challenges brought by changing work environment and by development of the Work 4.0 as the rest of the workers currently. We suppose that the focus on development of digital skills and digital attitudes in the context of late careers and specific patterns of transition to pension is needed in order to examine possibility of digital silver generation raise.

Innovations in ICT have been reflected in specific human capital development, e.g. in formation of new generation of so-called „digital natives“ (Herring, 2008, Prensky, 2001). Even if that is maybe somewhat confusingly and inaccurately understood as a generation who can easily adapt to ICT technologies, it is identified as a first generation born into a digital world. However, the identification of “digital strangers” as the generation who socialize into complete new digital world was one of the first steps to identify that even youngest generation have to learn how to digitally participate within Work 4.0 environment.

The different characters of the participation of different social groups in the digital environment are reflected in the concept of *„digital generational divide“.* According to analysis based on based on Bourdieu's concept of cultural habitus, digital divide covers the differences in digital skills, attitudes towards digital participation and digital access, in relation to the SES modified by age and gender. Age-related differences in digital literacy point not only to differences in digital skills, but also to differences in attitudes towards digital technologies and digital divide. Thus, the digital divide

[1] Mgr. Martina Porubčinová, Centre of Social and Psychological Sciences, SAS, Šancová 56, 811 05 Bratislava, Slovakia.progmpor@savba.sk

analyzed in terms of „digital habitus“ covers the area of digital literacy, the area of digital access and digital attitudes (attitudes towards digital technologies, patterns of digital participation).

With regard to trends in digital gap development, it is needed to be asked what is the digital habitus and its main types of people 55+? Can the generation of digital workers over 55 years be identified in the context of using digital technologies at work?

II. Silver workers in cultural perspective

We use the term silver workers to refer to the age group of people over 55 in the context of their careers, following how they adapt to the requirements of today's work environment and how they decide on their current and future employment and shape their expectations in relation to work and leisure.

When perceiving older workers over the age of 55, the sociological theoretical approach offers two options: in the demographic concept, to understand older workers as a clearly age-bound cohort or to examine age groups as social groups, i. as groups with a specific identity, as a differentiated “cultural field” in which several sub-entities (groups) with different relationships to the prevailing patterns and cultural norms of a given group can operate (Lyons, Kuron, 2013). The age group in this theoretical approach can be understood as a social force arising in a specific social context and having a specific identity, evolving in intergenerational relationships with other age groups (generations) (Mannheim, 1965, Lyons, Kuron, 2013).

Applying the traditional approach to the analysis of generations in the literature, which is based on the American generational breakdown, the age group over 55 can be defined as a group born before 1965, and thus a group that currently includes members of the Baby Boomers generation (born 1945-1965). However, with the gradual development, the oldest members of the Generation X (1960s - to the end of the 1980s) begin to enter this age group every year. Thus, the Baby Boomers generation is currently the one who is shaping their identity as a group of older workers, those who are entering a period of a possible late career, or who are facing the possibility of retirement.

What is the form, character, identity of the age group of workers over the age of 55? Is it possible to talk about a specific generation group that can (should) be given a special name due to special identity?

With the raising age of population and the development of more “flexible” or “protean” or “boundaryless” career concept, the attention is focusing also on the pluralization of the work-retirement transition. Ways of transitions are being pluralized, as the workers not only stop working completely, but they also “work intermittently for different organizations, start new career or business, can use a reduced or flexible working hours, can work intermittently to bridge employment (Bačová, 2019, p. 26). In these studies, the attention is focused to deeper live cycle changes with regard to human capital exploitation (Shultz, K., Wang, M., 2011), hypothesizing that the older age structure of the population could lead to interesting changes in job creation patterns.

According to Bačová (2019) sings of changes in retirement patterns and late career models have been reflected in various studies with the attention focused to deeper live cycle changes with regard to human capital exploitation. The older age structure of the population could lead to interesting changes in job creation patterns in terms of Silver economy also due to a fact that a significant part of the elderly are leaving to retirement via unemployment but at the same time a substantial part of the elderly return from unemployment to employment (Bačová, 2019, p 63).

New patterns of transition to retirement deserve the attention also in the context of digital literacy divide development. In the next part, the development of the digital divide can be monitored based

on data on digital literacy of specific age groups, based on comparing the attitudes of various age groups to digital participation (scope, intensity, focus of digital participation in the term of Internet use). Digital divide can also be measured according to the digital access of specific age groups.

Could the silver workers currently be perceived as digital silver workers generation?

III. Intergenerational digital divide in using of internet

The term silver surfers, which is used similarly to refer to people aged 50+, refers to those who use the internet on a daily basis. According to data obtained from abroad, the time range of Internet use in this group of users reached 4 hours more than in the group of users aged 18-24, focusing on the use of search tools and online shopping sites. As the findings suggest, the older generation – at least in specific environments - is also becoming a group for which participation in the online world is interesting and for which the Internet brings opportunities to overcome social isolation and promote a sense of independence (Gonzales-Onate, C., Fanjul-Peyró, C., Cabezuelo-Lorenzo, F., 2014).

To compare the digital participation of the examined age groups we used the data of the representative research of digital literacy in Slovakia by M. Velšic (2015, 2018, 2020) to compare closing of intergenerational digital divide in area of using the internet. According to the data of a study, from 2015 to 2018, the proportion of people aged 60+ who never use internet fell from 81% in 2015 to 68% in 2018.

Even if the share of those who claimed that they internet *every day* has declined in the age group 55-64 years from 37% 2015 to 19% to 2018, the intensity of use of internet has raised in general, as the proportion of those using the internet *several times a week* has increased in all age groups, including the age group 55-64 (from 7 to 21%).

Although there has been a general decline in the proportion of those who do not use the Internet at all, the 55-64 age group is the exception (an increase in 2018 from 33 to 40%).

In the oldest monitored group 65+, however, there is a noticeable increase in Internet usage intensity (several times a week) as well as a decrease in the proportion of those who do not use the Internet at all, similar to younger age groups.

The persistence of current significant differences in the intensity of the use of internet has been confirmed also using statistic methods. We applied nonparametric Mann Whitney U test that compares the significance of differences between the independent samples, to verify statistically significant differences in the level internet use among the examined groups. In case the intensity of the use of internet, the age group of 18-24 year old's reached significantly higher level to compare the oldest generations 55+ ($p=0.03288$).

However, any significant differences in the use of internet have not been confirmed among other examined age groups. These findings could suggest a gradual decrease or closing in intergenerational digital divide with respect to the older age groups.

However, the persistence of the intergenerational differences can be analyzed also in terms of the perception of the risks associated with the use of ICT (digital ethos) as well as in the perception of robots as collaborators (Velšic, 2018). Digital ethos of the workers in the mentioned areas differs according to the in the age of workers as the younger age groups claim that they are more ready to accept robot instructions and for the older ones these instructions seem to be more unacceptable (64% in the age group 25-34 years to and 75% in the age group 55-64 years.

With regard to the signs closing of the generation digital gap in the field of the use of internet, the attention can be focused on of share of internet workers in older age that can be analyzed as one of

the patterns of transition into late career, or from work to senior age. In a study of Piasna and Drahokoupil in 2018-2019, focused on internet and platform work was conducted in Bulgaria, Hungary, Latvia, Poland and Slovakia in order to map the extent of digital labour in CEE, two types of online sources for generating income were analyzed: internet work and its segment - platform work[1]. According to the findings of the study, the authors did not find the evidence that Internet and Platform Work is creating a qualitatively new labour market that interferes the traditional age and gender segmentation.

According to the age groups, the average age for IW Workers and platform works was lower than for those who have never engaged in this type of work, they are in the their mid-30s, with the average age difference between regular internet workers and those who never tried this type of work 6.2 years. Students were over-represented among internet and platform workers. However, these activities cannot be considered as students jobs, as most workers were full-time employed.

The age and gender composition of internet work (IW) and platform work (PW) was not radically different from other working adults. Internet and Platform work thus does not represent entirely new labour market that crosses traditional segmentation and former divides due to overlapping of offline and online activities. As the Internet cannot be seen as separated system, with the development of new patterns of employment in higher age among "silver workers" in their late career, new forms of late employment due to IW and PW among older workers can be expected. With regard to closing the generational digital gap the benefits of self-employment offered by IW and PW can be used among older persons, also with regard to benefits ICT offer for those with health difficulties.

Currently, however, the share of pensioners among platform works was (2.3% to 7.5%) to compare people who never participated in platform work. Even if some past experience with generating income on the internet are relatively common among working adults, the prevalence of regular internet and platform work remains very low in all five CEE countries. Moreover, labour market situation of Internet and platform workers was somewhat more precarious than for employed people generally, with a higher incidence of non-standard and fragmented employment. Services requiring higher skills and creativity were among the least prevalent forms of internet work, suggesting little overlap with the knowledge-based economy.

However, a possible shift in the age structure of digital workers for the future can be estimated, as there is a potential of older workers - both men and women – for greater labor market participation in the ICT sector. According to the study Women in digital age, the proportion of older women who left the digital job in that year fell from 15% in 2011 to 7% in 2015. The decline in the number of women who have left their jobs in the digital sector appears only in the age group over 55. Similarly, the share female workers with tertiary education in ICT jobs raised from 2.6% in 2011 to

[1] Internet Work (IW) includes the digitally – mediated provision of services typically without tan explicit contract for long-term employment, e.g. selling goods, if mediated digitally is part of IW. In a survey, following types of IW were examined: finding a paying guest for accommodation person owns, offering a taxi service, selling own possession online, selling self-made product online, sell or re-sell products online, generating income through blogging or sunning social media account, freelance work doing short tasks or "click" work, data entry, transcription, free-lance creative or IT work (web design, graphic design, programming, translation, content creation), professional freelance work (research, consulting, accounting). Platform Work (PW) as a narrower segment of IW – matches demand and supply and mediate the provision of work. Labour platforms organize the mediation of services and do not include property rental (Airbandb) or re-selling of goods (eBay). PW contributes to lower costs and improve the efficiency of the matching process.

3.2% in 2015 in the age group over 45 years (PIAAC study). Similarly, even for older men, there is a decline in leaving the IT sector.

The data documenting the increase in the share of digital workers in older age groups should also be monitored in view of the decrease in the number of students in the IT field in 2015 compared to 2011.

The structure of working population in Slovakia has been changing due to ageing population when the average age of the Slovak population rose from 38.98 in 2000 to 40.13 in 2016. According to a significant ageing processes is expected to occur in Slovakia as documented also by the share of the group 65+ that has expanded by 1.7 percentage points to 14,45% in 2015 (Lubyová, Štefánik et al, 2016, p. 25). Similarly, since 2004, we are witnessing the increase of the retirement age up to 64 years for both men and women with lower one based on a number of children.

The demand for labour is also closely related to replacement demand that reflects leaving the labour market for a certain reason as e.g. exiting for retirement. Due to significant ageing process in almost all European countries, the replacement demand caused by retirement is going to become more important. As the labour market structure in Slovakia is typical for its disparities and skill mismatch with regions with high demand and lack of available and skilled labour and lack of opportunities, the patterns of transition into pension can be significantly differentiated with different share of silver workers due to significant regional labour market disparities.

According to Lubyová, Štefánik, the uneven age structure within sectors will significantly influence labour demand patterns, f.e replacement demand is expected to be lowest in sector of ICT and financial activities (2016, p. 69). Specific situation can be identified as regards public sector (health and education) with high share of older workers; however, with the closing of age-related digital divide in the field of digital literacy, the structure of digital workers can develop to the future.

IV. Digital literacy of silver workers – the international comparison

Although there is a noticeable sign of stagnation in the development of Internet use in 2018 as well as in the development of digital skills (Eurostat, 2020) in Slovakia, education is proving to be an intermediary factor significantly affecting the intergenerational distribution in digital literacy also among the older age groups (Table 1).

Table 1: Individual level of digital skills in % Slovak Republic and European Union according to selected age groups and education levels (low level of education LE, middle level of education ME, high education HE) in 2015, 2016, 2017, 2019

	2015					2016					2017					2019				
digital skills	above basic	basic	basic and above basic	low	no	above basic	basic	basic and above basic	low	no	above basic	basic	basic and above basic	low	no	above basic	basic	basic and above basic	low	no
SR 25-54	30	28	62	27	0	32	29	64	26	0	28	29	70	23	0	31	30	64	29	0
EU 27 25-54	30	29	61	25	1	31	29	62	26	1	33	28	63	27	1	36	27	64	29	1
SR 55-64	7	13	20	30	0	9	19	28	33	0	13	19	35	29	1	9	22	30	37	1
EU 27	12	23	35	27	1	13	24	37	29	1	14	24	38	31	1	16	24	40	36	2

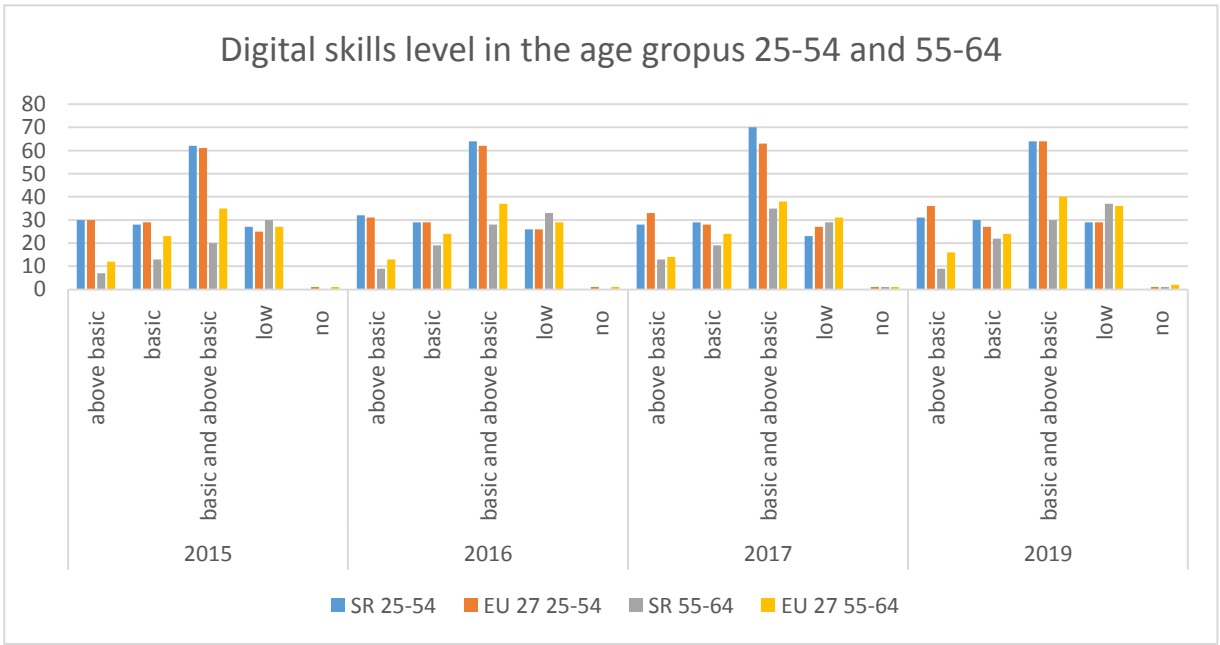
55-54																				
SR 55-74 LE	0	-	0	6	0	-	1	1	13	0	-	1	2	12	0	0	1	1	14	1
EU 27 55-74 LE	2	8	10	19	1	3	7	10	22	2	2	7	11	15	2	3	9	12	34	3
SR 55-74 ME	3	8	11	29	0	3	15	18	35	0	6	15	21	30	1	4	14	18	36	1
EU 27 55-74 LE	9	21	30	28	1	9	13	32	31	1	10	23	35	32	1	11	23	34	38	1
SR 55-74 HE	24	35	59	26	0	29	36	66	23	0	32	36	65	23	0	25	37	62	24	1
EU 27 55-74 HE	26	39	65	22	1	27	40	67	23	0	18	40	67	23	0	31	37	68	24	1

Source: Eurostat 2020

It is possible to point out a lower proportion of those people in the age of 55-74 years who have a lower level of formal education (LE) and at the same time achieve a low level of digital skills in Slovakia, with regard to the educational structure. Similarly, in the age group 55-74 as in other age groups, there has been an increase in the level of digital competencies from 2015 to 2017, with a slight stagnation in 2019 while the EU 27 countries continued to increase their digital skills in 2019.

In Slovakia, there is a lower proportion of those who have no digital skills within the age groups 25-54 and 55-64, and at the same time a higher proportion of those who achieve a basic level of digital literacy than the EU 27 average (Figure 1).

Figure 1: Digital skills level in the age groups 25-54 and 55-64 in Slovak Republic and EU



Source: Eurostat 2020

The trend towards polarization in the development of digital literacy can be identified as an increase in the proportion of those achieving above basic and also those achieving low levels of digital literacy and, at the same time, a decline in the proportion of those who are achieving a basic digital literacy level. Decrease in the share of population with a basic level of digital literacy can be identified within the EU-27 in the 25-54 age group, as well as the an increase in the share of those who achieve above basic digital literacy (from 30 to 36%) and low digital literacy (from 25 to 29%) in 2015-2019. Finland can be presented as an example of polarization of digital literacy.

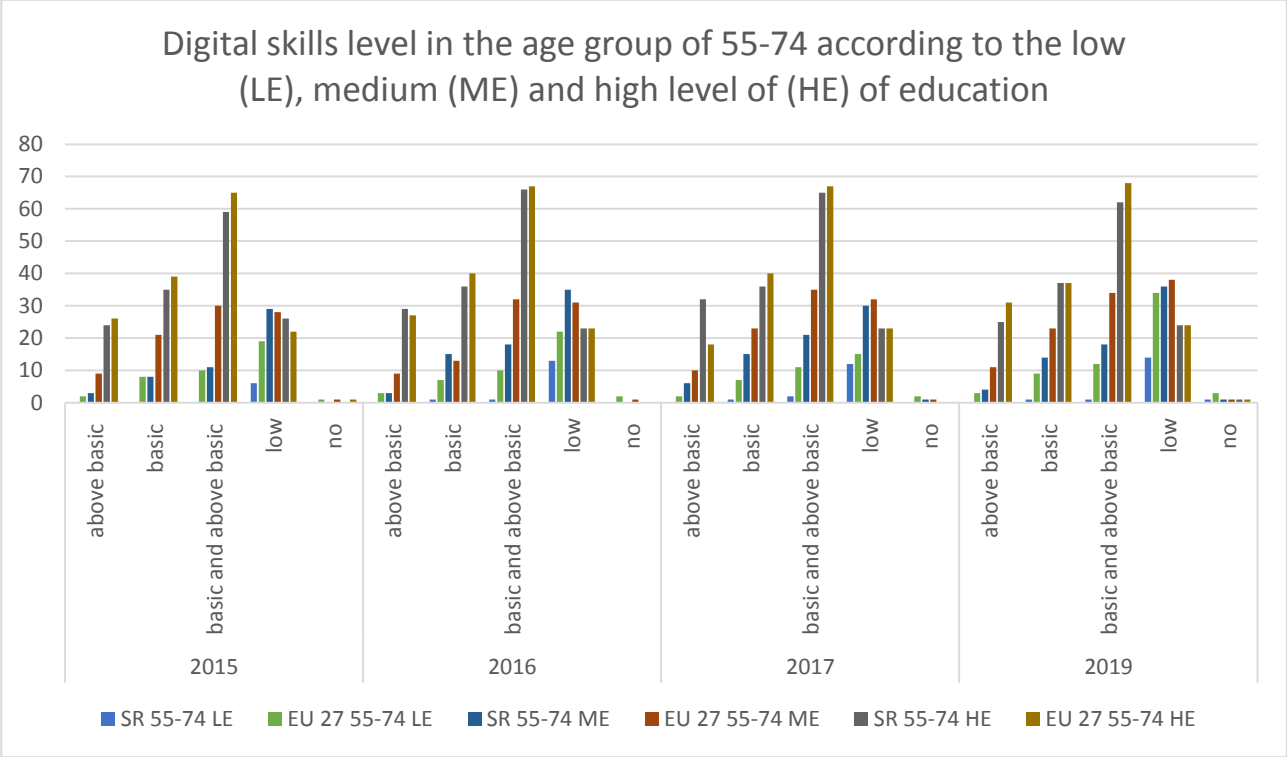
Currently, the trend of polarization of digital literacy in a sense of distribution of digital literacy levels within the particular age and educational group prevails in EU 27 countries with the exception of Greece, Lithuania, Slovakia, Romania and Norway, where the basic level of digital literacy has raised since 2015 in all age groups.

The rise of polarization of digital literacy (in term of differentiation of level of digital literacy within the age and education groups) in 2015-2019 is more visible in some European countries than in Slovakia.

In Slovakia, the basic level of digital literacy increased in all examined age groups in 2015-2019 with the exception of persons aged 55-74 with ME in 2019, when overall stagnation in the development of digital literacy was recorded. Within the age groups 25-54 in the years, however, the share of those with above-average digital literacy and those with low digital literacy also increased in Slovakia in 2019. The share of those who have no digital literacy has not changed.

The structure of education in Slovakia acts as a factor differentiating the level of digital literacy among the older age groups with regard to lower proportion of those people in the age of 55-74 years who have a lower level of formal education (LE) and at the same time achieve a low level of digital skills in Slovakia. With regard to the educational structure, the 55-74 age group with the highest level of digital literacy reached a higher share to compare in the EU 27 in 2015-2017 (Figure 2).

Figure 2: Digital skills level in the age groups 25-54 and 55-64 in Slovak Republic and EU according to the education level



Source: Eurostat 2020

To the future, the polarization of digital literacy in relation to education and occupation within the particular age can be expected due to different digital literacy requirements in the labor market context, as offline and online sociability overlapping is reflected also in digital literacy development.

IV. Conclusion

Generational digital divide covers comparison of digital habitus of among the specific age groups (generations). As the silver workers digital skills, attitudes and access change, we are witnessing the development of the intergenerational digital divide in the older age. Generation of Baby Boomers could hardly be identified as digital 20 years ago – when digital generation of Millennials raised and the digital gap in skills and attitudes was identified on most significant level between youngest and oldest generations.

As the digital generational gap is closing in Slovakia, we can observe the raise of digital skills in older age groups. As regard digital literacy, closing of generational digital divide in an intergenerational level can be observed within generation 18-24 years old (with100% of digitally literate) and 45-54 years old (with 93% of digitally literate) to compare the older generation 54+ still reaching lower levels of digital literacy (74% of digitally literate) (Velšic, 2020).

According to the empirical findings in digital literacy divide, we suppose digital silver workers generation to emerge in Slovakia in period not late than 10 years, when currently generation of 45-

54 years old will face the transition to late career life-stage. This period may probably be shorten due to improving and enriching of digital skills confirmed among 45-54 years at the level of 20 p.p. higher to compare 55-64 years old.

With regard to closing the generational digital gap and the studies of new work-retirement transition patterns (Piasna, Drahokoupil), the benefits of self-employment offered by Internet work and Platform work can favorize the use of internet work among older persons. We can hypothesize that a successful digital technology adaptation can support the emergence of new generational identity among "digital silver workers" for the future.

However, based on data of OECD (2019), the trend of polarization of digital literacy in relation to education and occupation within the particular age can be expected, as offline and online sociability overlapping is reflected also in digital literacy development. The results point to polarization of silver workers and emerging of digital silver workers as a subgroup of a silver workers generation.

Various examinations have been realized in order to follow the adoption of older people to technology that confirm that factor of facilitating conditions (support for digital learning, compensation for health disadvantaged) represent one of the key factors in technology adoption process as well as the wellbeing of older workers (Gell, N.M., Rosenber, D.E:, Demiris, G., LaCroix, A.Z., Kushhang V., P., 2015, Tomczyk, Ł., 2015). With regard to work in older age as well as with regard to benefits that ICT offer for those with health difficulties, the digital work in the older age offers the study field not for psychological but also for sociological optic due to mere aspects related to older workers experiences and needs.

To the future, the patterns and cultural expectations, standards and norms in field of technology adoption and technology use may act as a specific factor not only in technology adoption process among older adults, but also can modify late work life stage and work-retirement transition. Thus, as we accept a raise of new generation consciousness being an act of simultaneous combination of specific life-stage events, technological and social changes and inter-generational relations, that brings new patterns of behavior (late career), new skills and attitudes, the concept of "generation" could be analyzed with its sub-groups.

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