

# ICT Training As a Tool for Supporting Professional Activity of People Over 50: Case Study

DOROTA MAĆCIK

*University of Finance and Management in Warsaw, Poland*

RADOSŁAW MAĆCIK

*Maria Curie-Skłodowska University, Poland*

Persons over 50 are experiencing certain forms of social exclusion more often than younger people. A lack of the acceptance of information and communication technologies (ICT) and/or a lack of ICT access, commonly known as the digital divide, is probably the most important form of social exclusion experienced by the above-mentioned group in Poland. Skills related to ICT are perceived as one of the most important factors of maintaining professional activity by older people. Current situation, when in the perception of employers such skills are often lacking or not sufficient or up to date, leads to the proposal of some training activities aimed at developing and increasing such skills, which are not only strictly related to professional life but are also making everyday life easier. This paper presents a case study of ICT training activities undertaken in a testing project, whose main goal was to develop and pilot test an innovative methodology for extending professional activity of people aged 50+. Positive effects of the proposed learning method confirmed and validated the selected approach.

*Key Words:* ICT training, 50+ age group, digital divide, maintaining work, case study

## INTRODUCTION

Among the socio-demographic changes observable in most European countries, ageing of the society is perceived as one of the most important and negative ones. The reasons for such situation are both low or negative birth rate, as well as the progress of medicine resulting in the increased life expectancy. Elderly people can enjoy

[136]

relatively good health and are physically active, so the number of elderly in Western societies is increasing and will continue to increase in the coming years. The demographic growth of older generations in society does not coincide with their professional activity, which is too low in many European countries to meet the desirable level, even in pre-retirement age groups. This is at least partly an effect of outdated professional knowledge and lower than expected skills in the use of information and communication technologies (hereafter abbreviated as ICT), which is essential for many sectors in contemporary economy, making some older employees less valuable for some employers. This leads to a situation where people over 50 are prone to be affected by social exclusion and are having difficulties maintaining a current job or getting a new one.

This paper presents selected outcomes of the project focused on maintaining professional activity of persons over 50 in Lubelskie Voivodeship in South-East Poland based on the general situation of this age group in Poland, with particular focus on the issues related to the digital divide. The proposal of comprehensive activities programme, including ICT training, has been tested on a small group of 50+ employees in order to find the most effective set of activities for maintaining professional activity. This paper is focused on ICT related issues, including evaluation of proposed ICT training. The article is an extended version of a paper presented at MakeLearn 2013 conference, which was also included in the conference proceedings.

#### *Age Related Social Exclusion in the European Countries*

Considering that each European society must support a growing number of older (elderly) people, with all its consequences for the economy, the European Union enacts the directives, which are mobilizing the EU Member countries to extend the length of employment in order to promote the employment and self-employment of older people, thus increasing their job mobility, and also to promote active ageing (i. e. directives 2000/78/EC and 2003/578/EC). The latest European initiative dealing with the problems of people over 50 established the year 2012 as the European Year for Active Ageing and Solidarity between Generations, the aim of which was to emphasize the contribution of this age group to society as a whole. Active age-



ing is also an essential part of the Europe 2020 strategy with the goal of preventing social exclusion and improving the quality of life of the elderly, as well as maintaining them active as workers, consumers, volunteers, and citizens (European Commission 2012).

However, the achievement of these goals is difficult due to the phenomenon of social exclusion that affects elderly persons more often than younger persons. The following areas of exclusion, which are also the subject of EU special attention, are most frequently experienced by older employees: [137]

- *Employment* – maintaining work in the circumstances of increasing retirement age in some EU countries and growing unemployment rate in general (particularly in the youngest and the oldest professionally active groups) may be difficult in the short term in current economic conditions;
- *Participation in social life* – in some communities older people are not regarded as valuable persons with a lot to offer to younger members of the community, and their work, even as volunteers, as well as lifelong learning activities, are treated as unnecessary and costly efforts, regardless the true impact of older generations on the whole society;
- *Independent living* – age-related physical and mental limitations including cognitive difficulties can sometimes make active participation in society difficult, although proper medical and social care significantly improves the quality of life of elderly people.

The specific exclusion area is the digital divide. This term ‘commonly refers to the gap between those who do and those who do not have access to new forms of information technology’ (van Dijk 2006, 221–2). However, it should be noted that (the lack of) physical access should not be considered as the only factor (van Dijk 2005). The digital divide is common in elderly group and its consequences are appearing in all previously mentioned areas.

#### *The Nature of the Digital Divide*

The development and expansion of information technology is very fast and simultaneously affects almost every part of personal and

[138]

social life. Activities such as searching for information about work or special additional training, the possibilities of having a hobby, acquiring important information such as information about medical care or cultural events, and even personal budget management, becomes more difficult, more costly and in some cases even impossible without the use of information and communication technologies (ICT). Certain elderly people, who feel or think that using technology is difficult, even prefer to resign from active participation in some areas of their lives as opposed to using unwanted devices and/or services. For them alternative costs of not using ICT in everyday life, such as travelling and costs associated with it, additional charges for services to arrange their affairs personally, for example banking services in a local branch, are acceptable in order to avoid the use of ICT.

The acceptance of ICT by the elderly is usually slower when compared to the younger age groups. With increasing age, the openness to new experiences (as a personality trait) is changing and falls within the specter of manifested behavior of a particular person (McCrae et al. 1999). At the same time, the effectiveness of learning decreases due to lower motivation, weaker efficiency of mental processes (Sharit et al. 2008), and also weaker sight and/or hearing or other physical limitations (Carpenter and Buday 2007). As a result, in the field of computer use, its common software, the Internet and its resources – which is today regarded as one of the core competencies – the average person aged 50+ is less fluent in comparison to younger people (Reed, Doty, and May 2005; Sharit et al. 2008). However, only an appropriately high level of ICT acceptance allows an individual to fully participate in the contemporary social and professional live (named *e-Inclusion*) – the lack of or low level of such acceptance leads to a situation of exclusion, referred as the *digital divide* (Kaplan 2005).

The understanding of the term *digital divide* is not limited to the lack of physical access to digital technology (Warschauer 2003), but it is treated as a more complicated phenomenon – for example, in sequential approach by Jan A. G. M. van Dijk this type exclusion is the result of the rejection of information and communication tech-



nologies at one of stages of sequential acceptance process, which includes (van Dijk 2005, 21):

- *Motivational access* – motivation to use the technology (van Dijk not differentiates the user motivation, but we suggest on the base of experience that this motivation should be divided between two types: intrinsic – when a person wants to learn something for their own benefit, this type is better and more useful for future ICT usage; and extrinsic – usually caused by external pressure: requirements of the employer or the necessity of finding new job, this type of motivation is short-term – its finishes, when cause to learn disappears);
- *Material access* (having a computer or other capable device with internet connection like tablet, smart TV or smartphone, or possibility and permission to use them from their owners);
- *Skills access* (ability to have instrumental, informational and strategic skills allowing to use particular information technology; instrumental skills include ability of properly operate ICT devices, informational skills include ability to get desired information through ICT without unnecessary effort, and strategic skills include ability to use ICT for own benefit, including getting access to new resources, starting new work, business or hobby on the base of ICT usage or make another technology-connected positive change of own life);
- *Usage access* – practical use (measured by the number and range of applications, and time of use).

[139]

Mentioned approach is shown on figure 1 – where cumulative and recursive character of this process is visible.

It is important to note that van Dijk's approach does not substitute typical models of information technology adoption including Technology Acceptance Model (TAM) or UTAUT (Unified Theory of Acceptance and Use of Technology). ICT adoption and the factors influencing it have been up to date a subject of numerous studies (for example Davis 1989; Davis, Bagozzi, and Warshaw 1989; Venkatesh and Davis 2000; Moon and Kim 2001; Venkatesh et al. 2003). In the

[140]

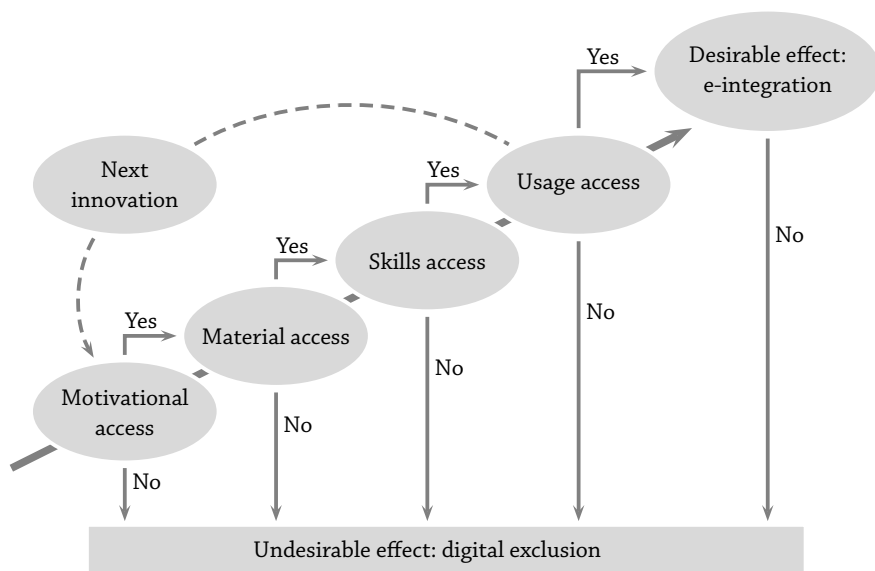


FIGURE 1 Sequential ICT Adoption Model by an Individual in van Dijk Approach (adapted from van Dijk 2005, 22)

contrary to other studies van Dijk focuses on sequential nature of technology adoption.

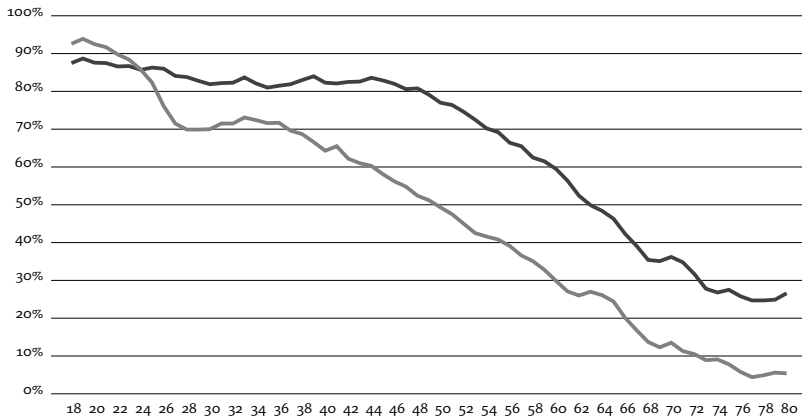
MAIN CAUSES OF DIGITAL DIVIDE EXPERIENCED BY PERSONS OVER 50YO IN POLAND AND ITS CONSEQUENCES

*Access and Use of the Internet in Households*

According to the available data Internet penetration rate in Poland on the level of households has been estimated on the level of 67% in 2011 and 70% in 2012 by Eurostat (2012). Lower penetration is reported in biannual large sample panel research Social Diagnosis – 61,1% for 2011 wave and 66,9% for 2013 wave (Batorski 2013). On the personal level, about 74% of Poles declared access to the Internet in 2011, and for the year 2013 this percentage is close to 76% (Batorski 2013). Rather average penetration rate in comparison to other European countries is accompanied by relatively large percentage of population having access to the Internet and not using it. In Social Diagnosis data this percentage has been estimated on the level of



## ICT Training As a Tool for Supporting Professional Activity



[141]

FIGURE 2 Access and Use of the Internet among People between 18 and 80yo in Poland in 2011 (dark gray – internet access at home, light gray – internet usage; adapted from Batorski 2013)

14,1% and 14,9% in 2011 and 2013 respectively (Batorski 2013). This means that the share of persons having access to the Internet in population of not-users is very high – more than 35% in 2011 (Batorski 2011), and increased recently to over 40% in 2013 (Batorski 2013). Excluding young children, main group of non-users having and often paying for the Internet access are persons over 50yo. Figures 2 and 3 show detailed data for persons between 18 and 80yo. Fall of access for 50+ age group is substantial, but percentage of Internet users decreases with age even quicker.

Presented data suggest that reasons other than lack of access prevent people from using the Internet, and according to van Dijk's approach, this can be caused by lack of motivation and necessary skills, particularly for 50+ age group.

### *Causes of Digital Divide in Poland*

From many different identifiable causes of mentioned situation affecting persons over 50yo in Poland, two types can be distinguished: external and personal reasons.

#### External Reasons

*Lack of physical availability and high cost of access.* The using of computers in enterprises in Poland was not common until the early

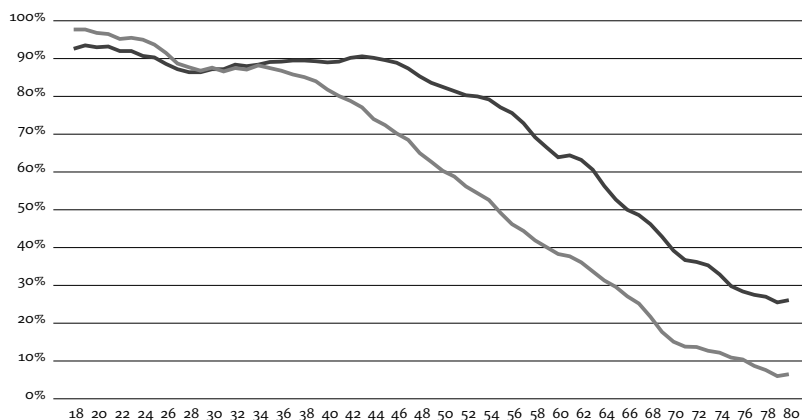


FIGURE 3 Access and Use of the Internet among People between 18 and 80yo in Poland in 2013 (dark gray – internet access at home, light gray – internet usage; adapted from Batorski 2013)

90s of 20th century, and the Internet has spread about 5–7 years later. Possessing personal computers and easy access to the Internet in one's home on a large scale took additional couple of years. For these reasons easy contact with the ICT in Poland is a relatively new phenomenon. Longer time of acquisition of technology was depended on high prices, which people had to pay for both the hardware/software and the Internet access service, especially in relation to the average incomes – those days reasons for not using the technology were most of all of a financial nature. Importance of such reason has been declining over last years – in more recent studies (Batorski 2011; World Internet Project 2010) despite the decline in prices of computer equipment and Internet access services – some elderly people declare financial reason not to use ICT, although the frequency of their occurrence dropped to single digits (only a small percentage of respondents answering this way). These respondents are people who are not technology users, so declared financial causes seem to cover some personal reasons of such behavior.

*Rapid changes and technological development.* Technological progress is now very fast, so many elderly people feel overwhelmed by rapid changes in ICT. Number of mobile technologies, mobile devices and possible applications for doing everyday tasks (e. g. purchases or payments) in different places and situations in real or vir-





tual world becomes so great that a large part of the people, especially the elderly, feel maladjusted to the contemporary world (Wagner, Hassanein, and Head 2010).

Personal causes

[143]

*Lack of skills.* Most of the older people have not ever participated in any computer courses (more than 90% of the population aged 60+) another few percentage had such training more than three years ago (Batorski and Zajac 2010). This means that most of older ICT users learned to use such technologies themselves. Considering rapid development of ICT, which is faster year by year, knowledge from some years ago is not adequate to the present applications (Wagner, Hassanein, and Head 2010).

*Feeling the fear and anxiety.* Such feelings are associated with a sense of incompetence which is caused by the above-mentioned lack of skills or outdated knowledge, but from the other side anxiety is also due to the lack of direct control and monitoring of the consequences of online behavior, which is expressed by such attitudes like unwillingness to pay over the Internet, use credit cards, do shopping or booking medical visits, hotels, tickets online etc. (Czaja et al. 2006).

These two reasons, lack of skills and feeling the anxiety, are probably the main reason why in 2009 the Internet was used only by 21.6% of people aged 50+ in Poland, although about 40% of them had access to it at home (Batorski and Zajac 2010). In addition, there are some people who are forced to use a computer at work despite their will, so they strongly reject the use of it other situations, when they do not have to. As a result, there is a significant group in Poland, even about 2 million people who, despite having access to the Internet at home, do not use it at all, and the majority of them are aged 50+, including the economically active people (Batorski and Zajac 2010).

*Lack of needs for ICT usage.* Regardless of the physical availability or financial reasons some older people just do not feel the need to use ICT, because of its perceived uselessness (Melenhorst, Rogers, and Bouwhuis 2006; Batorski 2011). Due to lack of positive experi-

[144]

ences with computer and Internet they have low level of internal motivation to change this situation. On the other hand, externally imposed necessity of the using ICT, even during basic activities, like paying for purchases by a credit card or receiving money into a bank account for the some older people in Poland is still something new and disturbing, so it raises the reluctance of the other novelties.

*Decreased level of openness trait.* Over a lifetime the manifestation of the personality dimension of openness changes – with the increasing age people become typically little more conservative and careful (Costa and McCrae 2003; McCrae et al. 1999).

*Causes of a physiological nature.* Older people are also facing physiological restrictions, such as a) weakening of the eyesight (which can make difficult to navigate the content displayed on the computer screen placed in intermediate distance when specific optical correction often is needed), b) lower precision of hand movements (hand and finger movements becoming less accurate and slower, which may causes difficulties in using the keyboard, mouse, touchpad or touchscreen), c) slowdown of cognitive processes (which makes difficult in quick deciding, following the changes, so using the Internet or computers interface at intuitive way and at the ability to learn and remember different things) (Carpenter and Buday 2007).

#### *Benefits of Overcoming the Digital Divide in Polish Society*

Different studies, focused on the problem of digital divide among older people, including the cyclical study of Social Diagnosis (2003–2011), and also the analysis conducted for the initiative ‘Dojrz@łość w sieci 2010,’ which began in 2010, noted a fairly clear link between keeping a job by the person aged over 50 and their use of information and communication technologies – the higher level of competence in this field – the easier to maintain the job (Batorski 2011; Batorski and Zajac 2010). ‘The results of the two years interval panel tests clearly show that Internet usage is associated with positive consequences for people aged 50+. Among the many positive effects of the Internet usage are sustaining economic activity (although it has no effect on reactivating professionally non-active persons), career progression, social activities and more frequent participation



in cultural and social life. At the same time there is no evidence of the impact of the Internet on the health deterioration. These positive effects experienced by users of ICT are connected at the same time with reduction of the life chances of people who do not use technologies, and also with the difficulties which they face in everyday life' (Batorski and Zając 2010, 86). Significant differences in the professional activity of people over 50% using and not using the Internet can be seen mainly in the age ranges: 50–55 and 60–65, for those differences are even about 20–30% favoring Internet users.

[145]

Using the Internet can also give a better chance for career progression for persons aged 50+ (in the users group about 8.9% of the employed has been promoted, and in the not-users group only 2.8%), which although may be associated with higher general activity of those people. However, there is no evidence of a link between the use of the Internet, and the establishment of own businesses by persons over fifty years old (Batorski and Zając 2010, 75).

Regardless of opportunities for retention or finding a new job, active usage of ICT makes life easier. It allows to work up interests (by seeking new information among Internet resources, but also by finding the groups of interest, discussion, or special training or courses), or managing a bank account, doing payments or purchases without having to leave home which for the elderly can be difficult, register to the doctors and find information about the possibilities of medical treatment or simply being well-informed what is going on in society.

All these reasons lead to the conclusion that the acquisition of ICT related skills among older people would be beneficial for them in many ways. Therefore government agencies and NGOs (Non-Government Organizations), also in Poland, created many different programmes to minimize digital divide. For instance under the auspices of the Polish Ministry of Administration and Digitization a programme named 'Polska Cyfrowa Równych Szans' (Digital Poland of Equal Opportunities, <http://latarnicy.pl>) is currently being implemented. It was aimed primarily at making digitally excluded persons over 50% aware of benefits possible to obtain through

the use of information technology and to minimize anxiety and fear of technologies at this age group. Subsequently, as the second step, a training to acquire basic ICT skills will be offered for those people.

[146]

#### ICT TRAINING FOR PERSONS 50+ YO: CASE STUDY

Presented case study describes selected activities undertaken in a project and their results. The project's main goal was to develop and pilot test an innovative methodology for extending working activity of people aged 50+, actually employed in the Lublin Province located in the South-East of Poland. Project named 'Obudź w sobie olbrzyma' (Wake the Giant in Yourself, <http://olbrzym.info>) has been publicly founded by Human Capital Operational Programme with the engagement of European Social Fund.

#### *Main Goals of the Project*

This project included various types of support for people aged 50+ and contained such elements as coaching, medical and therapeutic care, psychological and motivational workshops, ICT trainings and vocational trainings. Trainings, especially ICT, were carried out in a way which created different opportunities of longer working, rather than forcing people to continue it. This increases 'enables' motivation, while forcing usually results in reluctance. The aim of proposed support was creation special conditions for people aged 50+ enabling them to work longer and being in a good mental and physical condition. Consequently, this action would allow them to extend their working active life. It is very important now in Poland – in the situation of legislative changes to extend the retirement age to 67 (equally for both genders). Nowadays, when these legal changes caused widespread public dissatisfaction, it is necessary to give the employed people aged 50+ such support, so that they could have the physical, psychological and health potential and to provide work at such a late age.

One of the undertaken activities in this project was the ICT training, used as a method which counters digital divide and improves the quality of participation in social and professional life for older



people. In determining the specific objectives of the training, van Dijk's (2005) concept of sequential process of acceptance of Internet technologies was used:

- Overcoming psychological barriers of the active use of ICT for the beginners; [147]
- Motivating trained participants to use actively ICT in their private and professional lives, this can influence on revaluing those barriers;
- Encouraging the greater use of ICT at home or in travel situations through a variety of devices, like computers with mobile Internet access, smart phones, tablets etc;
- Teaching participants (according to the possessed skills level at the start of training) required instrumental (operational) skills needed for independent and efficient ICT use at home and at work;
- Teaching desired level of informational skills – the efficient search for different information: professional, financial, purchasing, etc., use of tools and equipment in a variety of conditions and situations;
- Teaching necessary strategic skills, allowing to manage one's use of ICT to achieve important personal and professional purposes;
- Encouraging participants to upgrade continuously their qualification and update skills.

*Results of the Project: Employee's Perspectives*

Pilot testing in ICT training methodology included the basic level and the level for skills improvement (such as the use of office programmes) respectively to participants' needs. Trainings in 3 groups of ten persons with different ability levels were carried out between October and December 2011, thirty didactic hours of training were provided – 4 hours per week, divided into 2 meetings a week. Trainings were conducted by two trainers, one of them was a person at the age of 50+, and the second one – a younger person. This approach was perceived as innovative. Both trainers have extensive ex-

TABLE 1 Perceived ICT Skills Level: Ex-Ante vs. Ex-Post Evaluation Results (Dependent Sample *t*-test)

Group/skills	Ex-ante		Ex-post		<i>t</i>	<i>p</i>	<i>d</i> **	
	M	SD	M	SD				
[148] Whole group ( <i>n</i> = 30)	(1)	2.67	1.09	3.40	0.72	-4.626	0.000	2.06
	(2)	2.80	1.13	3.60	0.67	-4.738	0.000	2.27
	(3)	3.50	0.63	3.97	0.60	-4.065	0.000	1.95
Office workers ( <i>n</i> = 23)	(1)	2.96	1.06	3.57	0.73	-3.102	0.005	1.74
	(2)	3.13	1.01	3.78	0.60	-3.185	0.004	2.06
	(3)	3.61	0.60	4.09	0.51	-3.447	0.002	2.21
Physical workers ( <i>n</i> = 7)*	(1)	1.71	0.49	2.86	0.73	-8.000	0.002	4.82
	(2)	1.71	0.76	3.00	0.58	-6.971	0.000	4.92
	(3)	3.14	0.38	3.57	0.79	-2.121	0.078	1.88

NOTES \* Very small group. \*\* Cohen's *d* for repeated measures (Cohen 1977). (1) general computer skills, (2) general Internet skills, (3) mobile phone skills. 1–5 scale has been used, higher numbers mean higher level of skills.

perience in conducting this type of training, even in groups of older persons.

#### Evaluation of ICT Skills before and after Training

Participants of the project in the evaluation surveys (ex-ante- and ex-post) evaluated their skills in using such devices/technologies like computer, Internet and mobile phone (table 1).

Generally, use of mobile phone technology proved to be the highest from ICT skills at this age group. These assessments are the highest from all technologies both before and after the training. Although the proposed ICT training did not include issues simply related to the use of mobile phone and mobile Internet on the phone, we can see a significant increase in this particular skill (table 1), only in the group of physical workers statistical tendency can be observed instead. To judge effect size Cohen's *d* measure has been calculated – using formulas for repeated measures (Cohen 1977). In all cases *d* value is much over 0,8, that is assumed to mean large effect size. This is in concordance with *p* values associated with paired *t*-tests used for assessing differences between ex-ante and ex-post evaluation.



## ICT Training As a Tool for Supporting Professional Activity

TABLE 2 Perceived ICT Training Usefulness: Ex-Ante vs. Ex-Post Evaluation Results (Dependent Sample *t*-test)

Group	Ex-ante		Ex-post		<i>t</i>	<i>p</i>	<i>d</i> **
	M	SD	M	SD			
Whole group ( <i>n</i> = 30)	7,63	1,86	7,57	1,59	1,090	0,285	0,09
Office workers ( <i>n</i> = 23)	7,35	2,01	7,48	1,53	-0,251	0,804	0,19
Physical workers ( <i>n</i> = 7)*	8,57	0,79	7,86	1,86	1,698	0,140	1,37

NOTES \* Very small group. \*\* Cohen's *d* for repeated measures (Cohen 1977). 1–9 scale has been used, higher numbers mean higher level of skills.

[149]

For the assessment of the ability to use computers and the Internet in the ex-ante evaluation in office workers' group dominated intermediate estimates of skills, and low ones in physical workers group. In ex-post evaluation averages higher by one scale point was achieved – respectively high level for office workers, and intermediate for physical workers. Also in this case, the changes in perceived competence are significant in both groups, as well as for whole group of project participants (for those differences the value of *p* does not exceed 0.005). Increase of perceived skills by participation in the project is easily visible in table 1.

Taking into consideration the work environment, computer and the Internet skills were consistently lower among physical workers – mostly at the intermediate level. Comparing ex-post results to those from ex-ante survey, we can say that, in general, participating in this project improved the skills of the use of computers and the Internet among participants, despite relatively short training time and partly intrinsic type of motivation.

### Evaluation of Usefulness of ICT Training

However, project participants do not believe that mentioned training was useful at work or in other areas of life. Evaluation of training effects indicates that perceived usefulness does not differ significantly in ex-ante and ex-post surveys, as shown in table 2 (Cohen's *d* measure signalizes no effect in these cases – there should be noted that relatively large *d* value for physical workers' group is rather caused by a small group size than real difference).

[150]

Moreover, the average evaluation of usefulness in the whole group, and among physical workers is a bit lower. It was partly due to the fact that participants were professionally active people so they could not see the benefits and because training did not increase significantly their professional competence on the labor market (training was focused on basic skills, not highly professional or very specific). Another reason for this situation is, probably the fact that more emphasis was put on skills during the training, and too little on different possibilities of using these skills in the daily life activities. The next reason could be unrealistic self-evaluation of skills: too high, which resulted in selecting a group with a higher ICT skill level and, as a result some of them faced difficulties in learning things which were known to other participants in the group; or too low skill level – which, on the other hand, led to the selection of a lower level group and as a result evoked negative emotions, like frustration, and feeling that training does not provide any benefit for trainee.

More specific analysis of differences in perceived usefulness of training between groups depending on the skill level suggests that this project met the expectations of most people with low ICT skills who began training from the basic level (table 3). This group (group 1) also highly appreciates the match of training topics to their needs. Results for persons from group 3 (mainly office workers) indicate quite large improvement in computer and the Internet skills. Primary expectations in this group were indeed smaller, but more realistic, so these persons were probably more focused on real training tasks. In group 2 (mainly physical workers) despite the biggest increase in skills (table 1), training was evaluated slightly worse. These people have still the inner belief that their skills are exactly the same like before the training; they also expressed a reluctance to participate in the training. It is probably caused by a lack of motivation to use a computer in private life and no need to use of a computer at work – physical workers usually do not have contact with the computer and the Internet at work, so their motivation for this type of training was lower from the beginning, which resulted in a greater reluctance and worse evaluation of effects.





TABLE 3 Evaluation of Training: Group Level

Item	(1)	(2)	(3)	(4)
How much training met your expectations?	8.2	7.4	8.0	7.9
How much training has improved your computer skills?	6.8	7.0	8.1	7.3
How much the training has improved your Internet skills?	7.1	6.7	8.5	7.4
How much training was tailored to your skills?	8.0	7.2	8.2	7.8

[151]

NOTES Column headings are as follows: (1) group 1 – elementary level, (2) group 2 – intermediate level, (3) group 3 – intermediate level, (4) average from all groups.

*Results of the Project: Employers Perspective*

The last point to be considered is employers’ expectations about the usefulness of performed ICT training. It is worth to note that the need for the involvement of employees aged 50+ in the training of ICT was more strongly valued by employers than the workers themselves.

According to the employers (ex-post surveys) the ICT trainings (assessed similarly high as medical care package – with the average of 8.8 on the 1–9 point scale) have the great usefulness for increasing economic activity of working people aged 50+. At the same time the biggest difference in evaluating such training is seen between these two groups – almost 85% of employers indicate that participating in computer training is useful for the employee, whereas only about 18% of the employees indicates the same.

Employers evaluate the presence of older people in their enterprises positively, indicating that they work as well or even better as younger people, they also help their junior partners with life experience they have and willingly grab the opportunity to update knowledge and skills. Almost 70% of surveyed employers see the benefits of the extension of the employment time of workers who have reached retirement age. They should stay active instead of going to retirement, because they are people with great experience who possess special work ‘know-how.’ Only about 30% of employers do not see mentioned benefits, but pointed some difficulties, such as a weaker perception of older workers, weaker motivation to work, lack of knowledge about modern techniques (44% of surveyed employers who does not see the benefits). The least frequently indicated rea-

[152] son for not recognizing the benefits is knowledge inaccuracy. At the same time, however, more than 90% of the respondents expressed a strong willingness (67%) or the probability of willingness (22%) to use the programmes that support the extension of working lives of their employees.

#### CONCLUSIONS

People aged over 50 who participated in the ICT training have acquired skills in the use of computers and the Internet, which also increased their competence in the use of mobile phones; differences in the evaluation are significant. At the same time, however, participants do not believe that such training was important and useful, which can become one of the reasons of reluctance to participate in a similar training in the future, and a cause of unwillingness to use more frequently new skills in a daily life. So, such behavior does not help to reduce the level of the digital divide. Because the training, in participant's opinion, was carried out in an interesting way, and the evaluation of trainers was high, it suggests that the problem of the perceived uselessness is connected with the intrinsic motivation, which – when is not awoken – does not generate needs for ICT use.

On similar training within the ICT spectrum (in case that these are not very professional skills training, but focused on minimizing the level of the digital divide) it is worth to pay special attention to the benefits of the free uses of technology in the widest spheres of social life. Showing older people, who may not want to do work, but choose a different way to participate in social life for the common benefit, how the information and communication technologies can be useful and helping in this sphere, may raise the intrinsic motivation to adopt such technologies. Only extrinsic motivation to learn basic technical skills does not rise interest and willingness for self-improvement.

Similar conclusions can be applied to employers' perception of the usefulness of ICT trainings. If the employee is not internally interested in it – skills that were acquired will be used marginally and only for the fulfilling work's purposes. The real threat of los-



ing a job or – on the other hand – the possibility of career progression – are able to motivate employees to participate in this kind of training, but in many cases such participants will not be interested in the possibility of getting knowledge through such training. When the employer (or even the person conducting the training) focuses on raising awareness of internal needs of the employee, minimizing fears, and showing wide benefits which are not only associated with work, but also with life outside the organization – in this way they will increase the intrinsic (better) motivation and willingness to adapt new skills and knowledge by the employees.

[153]

## REFERENCES

- Batorski, D. 2011. 'Use of Information and Communication Technologies: Social Diagnosis 2011; Objective and Subjective Quality of Life in Poland.' *Contemporary Economics* 5 (3): 213–41.
- Batorski, D. 2013. 'Diagnoza społeczna 2013.' [http://www.diagnoza.com/pliki/raporty/Diagnoza\\_raport\\_wstepny\\_2013.zip](http://www.diagnoza.com/pliki/raporty/Diagnoza_raport_wstepny_2013.zip)
- Batorski, D., and J. M. Zając, ed. 2010. *Między alienacją a adaptacją: Polacy w wieku 50+ wobec Internetu*. Warsaw: UPC Polska. [http://dojrzaloscwswieci.pl/tl\\_files/pliki/Raport\\_Otwarcia.pdf](http://dojrzaloscwswieci.pl/tl_files/pliki/Raport_Otwarcia.pdf)
- Carpenter, B. D., and S. Buday. 2007. 'Computer Use among Older Adults in a Naturally Occurring Retirement Community.' *Computers in Human Behavior* 23 (6): 3012–24.
- Costa, P. T., and R. R. McCrae. 2003. *Personality in Adulthood: A Five-Factor Theory Perspective*. New York, NY: Guilford.
- Cohen, J. 1977. *Statistical Power Analysis for Behavioral Sciences*. New York, NY: Academic Press.
- Czaja, S. J., N. Charness, A. D. Fisk, C. Hertzog, S. N. Nair, W. A. Rogers, and J. Sharit. 2006. 'Factors Predicting the Use of Technology: Findings from the Center for Research and Education on Aging and Technology Enhancement (CREATE).' *Psychology and Aging* 21 (2): 333–52.
- Davis, F. D. 1989. 'Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology.' *MIS Quarterly* 13 (3): 319–39.
- Davis, F. D., R. P. Bagozzi, and P. R. Warshaw. 1989. 'User Acceptance of Computer Technology: A Comparison of Two Theoretical Models.' *Management Science* 35 (8): 982–1003.
- European Commission. 2012. *The EU Contribution to Active Ageing and Solidarity between Generations*. Luxembourg: Publications Office of the European Union.
- Eurostat. 2012. 'Level of Internet Access: Households.' <http://epp.eurostat>

- .ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tino0134
- Kaplan, D. 2005. 'E-Inclusion: New Challenges and Policy Recommendations.' [http://www.unic.pt/images/stories/publicacoes/kaplan\\_report\\_einclusion\\_final\\_version.pdf](http://www.unic.pt/images/stories/publicacoes/kaplan_report_einclusion_final_version.pdf)
- McCrae, R. R., P. T. Costa, M. P. de Lima, A. Simões, F. Ostendorf, A. Angleitner, I. Marušić, D. Bratko, G. V. Caprara, C. Barabanielli, and R. L. Piedmont. 1999. 'Age Differences in Personality across the Adult Life Span: Parallels in Five Cultures.' *Developmental Psychology* 35 (2): 466–77.
- Melenhorst, A.-S., W. A. Rogers, and D. G. Bouwhuis. 2006. 'Older Adults' Motivated Choice for Technological Innovation: Evidence for Benefit-Driven Selectivity.' *Psychology and Aging* 21 (1): 190–95.
- Moon, J. W., and Y. G. Kim. 2001. 'Extending the TAM for a World-Wide-Web Context.' *Information and Management* 38 (4): 217–30.
- Reed, K., H. Doty, and D. May. 2005. 'The Impact of Aging on Self-Efficacy and Computer Skill Acquisition.' *Journal of Managerial Issues* 17 (2): 212–28.
- Sharit, J., M. Hernandez, S. Czaja, and P. Pirolli. 2008. 'Investigating the Roles of Knowledge and Cognitive Abilities in Older Adult Information Seeking on the Web.' *ACM Transactions on Human-Computer Interaction* 15 (1): 3–28.
- van Dijk, J. A. G. M. 2006. 'Digital Divide Research: Achievements and Shortcomings.' *Poetics* 34 (4–5): 221–35.
- . 2005. *The Deepening Divide: Inequality in the Information Society*. London: Sage.
- Venkatesh, V., and F. D. Davis. 2000. 'A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies.' *Management Science* 46 (2): 186–204.
- Venkatesh, V., M. G. Morris, G. B. Davis, and F. D. Davis. 2003. 'User Acceptance of Information Technology: Toward A Unified View.' *MIS Quarterly* 27 (3): 425–78.
- Warschauer, M. 2003. *Technology and Social Inclusion: Rethinking the Digital Divide*. Cambridge, MA: MIT Press.
- Wagner N., K. Hassanein, and M. Head. 2010. 'Computer Use by Older Adults: A Multi-Disciplinary Review.' *Computers in Human Behavior* 26:870–82.
- World Internet Project. 2010. *World Internet Project: Poland 2010*. Warsaw: Agora. [https://uke.gov.pl/files/?id\\_plik=8030](https://uke.gov.pl/files/?id_plik=8030)



This paper is published under the terms of the Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

