Technophobia among middle-aged and older adults in Latvia: A pilot study

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Abstract

This study examined levels of technophobia in a sample of 124 middle – aged and older adults who were Vidzeme region residents in Latvia. Technophobia was assessed using Rosen and Weil's Measuring Technophobia Instruments, which determine anxiety, cognitions and attitudes towards computer technology. Technophobia levels were tested for differences between the middle-adults and older adults, and the genders. By analyzing the correlation coefficient between women got the data that between age and anxiety, thoughts and attitudes there are weak positive and statistically significant correlation. Between men statistically significant correlation was obtained only between age and anxiety, but between age and the age and thoughts and attitudes were no statistically significant correlation. In Latvia is not carried out such a study.

Keywords: Middle-aged and older adults; aging; technology use; technophobia; technophobia test.

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1. Introduction

In almost every country, the proportion of people aged over 60 years is growing faster than any other age group, as a result of both longer life anticipation and worsen fertility rates. This population ageing can be seen as a success story for public health policies and for socioeconomic development, but it also face society to adapt, in order to maximize the health and functional efficiency of older adults as well as their social participation and security.

The population in the WHO European Region is ageing rapidly: its median age is already the highest in the world, and the proportion of people aged 65 and older is forecast to increase from 14% in 2010 to 25% in 2050. People in nearly every part of the Region are living longer, but their chances of spending these later years in good health and well-being vary within and between countries (WHO/Europe, 2017).

When it comes to using computers, older adults have different needs and concerns compared to younger adults resulting from the natural physical and cognitive changes that come with aging, which tend to become more noticeable at approximately 45 years of age (Hawthorn, 2000). Each of these changes has important implications for the use of computers by older adults. For example, physical changes associated with aging include declines in vision, hearing, and psychomotor coordination (Hawthorn, 2000). Thus, computer and web interfaces will be more appropriate for older users if they make use of features like larger fonts, sounds within certain frequency ranges, and layouts that require less precies mouse movement. Similarly, cognitive changes such as reduced attention span, declines in memory, and changes in spatial abilities create a need for interfaces that have fewer distractions, provide memory cues, and are simple to learn and understand (Hawthorn, 2000).

At the beginning of 2016, Latvia population accounted for 1 million 969 thousand persons. The share of women in the total country population comprised 54.1 %. Female number at the age group under 36 years is smaller than that of men (commonly the number of newborn boys prevail over the number of newborn girls as well). The shares of men and women at reproductive age (15–49 years) are rather equal – 49.7 % of women and 50.3 % of men, while in the age group over 65 years the number of women exceeds the number of men two times. In Latvia population ageing may be observed. Average age of Latvia residents at the beginning of 2016 accounted for 42.2 years, of which 44.9 years among women and 39.9 years among men (at the beginning of 2010 those were 40.4, 42.9 and 37.4 years, respectively)(Central Statistical Bureau of Latvia, 2016).

In 2015, 76.1 % of households had access to the Internet, while in 2004 there were only 14.7 % of such households. Out of the population aged 16–74, 74.9 % used the Internet on a regular basis1. Although the number of Internet users has been growing in almost all age groups during recent years, the indicators differ with regard to various levels of education and age, whereas women and men use the Internet quite similarly. Internet is used on a regular basis by 92.8 % of people who have attained higher education, by 71.0 % of persons with secondary education, and by 52.8 % of residents with basic education or lower, as well as by 100 % of pupils and students. Young people use the Internet the most on a daily basis: 97.0 % of persons aged 16–24 and 96.7 % of persons aged 25–34. Moreover, the largest share of Internet users was recorded in households with children. A notably smaller share – 31.5 % – is taken by persons aged 65–74. Nevertheless, in comparison to 2013 (20.5 %), there are more and more Internet users within the respective age group.

Along with the change in the shopping habits of the population, the number of online purchases has increased. During the last eleven years, the number of persons buying goods or services on the Internet has risen sharply – from 3.3 % in 2004 to 44.9 % in 2015. In 2015, people mostly made online purchases of clothes and sports goods (50.8 %), as well as tickets for events (28.9 %). Although ICT habits do not depend on one's gender, online purchases of males and females tend to differ. In 2015, 57.0 % of females buying or ordering goods or services for private use over the Internet purchased clothes and sports goods, which is 14 percentage points more than the same purchases made by males. Whereas males purchased electronic equipment (21 percentage points more) and computer

hardware (13 percentage points more) more often. Women used information and communication technologies more often than men when contacting their relatives or friends. In 2015, 45.2 % of men called or contacted their relatives electronically or via the phone at least once a week and 59.5 % of men contacted their friends in the same way. However, women were a lot more active – 59.0 % of them called or contacted their relatives at least once a week and 64.3 % contacted their friends at least once a week.

Computer phobia or technophobia is a complex interplay of behavioural, emotional and attitudinal components. Jay (1981, p. 47) defines it as "a resistance to talking about computers or even thinking about computers; fear or anxiety towards computers; hostile or aggressive thoughts about computers".

Rosen and Maguire (1990, p. 276) characterize technophobia as "anxiety about current or future interactions with computers or computer-related technology; negative global attitudes about computers, their operation or their societal impact; and/or specific negative cognitions or self-critical internal dialogues during actual computer interactions or when contemplating future interaction"[6.].

Rosen et al. (1993) postulate that there are three types of technophobes based on an escalating anxiety of how they would react while using a computer – the "uncomfortable users", the "cognitive computerphobes" and the "anxious computerphobes". In specific cases of consumer decision making it is likely to be anxiety aversion that results in a reduction of choice. Computer anxiety is an example of state anxiety, conceptualised as a transitory condition, which fluctuates over time.

The changes and challenges experienced by middle-aged and older adults and their implications for computer use have been studied by many different researchers in many different contexts. When it comes to using computers, older adults have different needs and concerns compared to younger adults resulting from the natural physical and cognitive changes that come with aging, which tend to become more noticeable at approximately 45 years of age (Hawthorn, 2000). Each of these changes has important implications for the use of computers by older adults. For example, physical changes associated with aging include declines in vision, hearing, and psychomotor coordination (Hawthorn, 2000). Thus, computer and web interfaces will be more appropriate for older users if they make use of features like larger fonts, sounds within certain frequency ranges, and layouts that require less precies mouse movement. Similarly, cognitive changes such as reduced attention span, declines in memory, and changes in spatial abilities create a need for interfaces that have fewer distractions, provide memory cues, and are simple to learn and understand.

The overall findings indicate that technology anxiety correlates with demographic variables such as age, gender and academic qualifications. Therefore, the implications of the study are that technology product engineering and marketing should recognise the importance of: study of the psychosocial needs of technology products, human factors in engineering design which need to fit these needs; and developing product designs facilitating consumers' psychosocial needs (Gilbert, Lee-Kelley & Barton, 2003). Consensus among numerous studies is that females report higher levels of computer anxiety than males (Hogan, 2008).

2. Objective

The objective of the research was to identify the presence of technophobia level among middle-aged and older adults; and correlation between gender and computer anxiety, thougts and attitutes toward computer among middle-aged and older adults in Latvia.

3. Method

Research performed using quantitative method. The instruments which used for data collection: demographic questionnaire about age and gender; and the Technophobia test: Computer Anxiety Rating Scale Form C, Computer Thoughts Survey Form C, General Attitudes Towards Computers Scale Form C.

The Technophobia tests created and validated by Dr. Rosen and Dr.Weil. These are:
- questions related to computer anxiety - Computer Anxiety Rating Scale Form C (CARS-C)
- questions related to computer toughts - Computer Thoughts Survey Form C (CTS-C)
- questions related to general attitudes to computer - General Attitudes Towards Computers Scale Form C (GATCS-C)

This consisted of 20 statements, reflecting both positive and negative attitudes towards computers. Respondents were required to indicate their level of agreement with the statements using a five-point Likert scale (Rosen, D. C. Sears and M. M. Weil, 1992). This scale is translated in Latvian by authors of the article.

The questionnaires were designed to be self-administering. Participants were told to accurately read the instructions on each questionnaire as they vary for each scale. They were also self-confident that: their responses would remain unidentified and be kept confidential; that they should answer really fairly; and that the questionnaires are not a control of knowledge and that there are no right answers (Rosen et al., 1992). The researcher was also in the presence to answer any questions. No time limits were impressed on the questionnaires but they were in general accomplished in 30 minutes.

The percentage levels of Technophobia and percentage levels of techophobia in Males and Females were obtained.

Tne correlation analysis was performed to describe the relationship among the dimensions of CARS, CTS and GATS.

4. Results

The participants in the pilot study consisted of 124 middle-aged and older adults (78 women and 46 men) who were Vidzeme region residents in Latvia. They ranged in age from 45 to 87, the average age in the sample was 59,37 (SD=11,02) years.

Technophobia test consists three separate parts – measures: Computer Anxiety; Computer Thoughts; and General Attitudes Towards Computers. Each part can reflect into three levels of technophobia: No Technophobia, Low Technophobia and Moderate/High Technophobia. An overall measure of technophobia based on a combination of the measurements.

The levels of technophobia are shown in Table 1.

Table 1. Percentage levels of technophbia

Scales	No Technophobia	Low Technophobia	Moderate/high Technophobia
	n = 124	n = 124	n = 124
CARS - C	60%	17%	23%
CTS - C	12%	15%	75%
GATS - C	14%	40%	46%
Averages	29%	24%	47%

Results from Coputer Anxiety Rating scale 60% respondents, Computer Thoughts Survey 75% respondents and General Attitude Toward Computers scale 46% shows that have higher rate than averages. Average results shows that approximately half of all respondents shows moderate/high level of Technophobia. Results reported in Table 1 that in relation to the CARS-C there is 60 percent of

respondents report no technophobia, 40 percent of them report technophobia from low to moderate/high levels. In terms of CTS-C, 12 percent of respondents report no technophobia, while 90 percent of them are reporting technophobia from low to moderate/high level. In terms of GATS-C, 14 percent of respondents report no technophobia, while 86 percent of them are reporting technophobia from low to moderate/high levels.

The percentage levels of technophobia in men and women, who participated in this pilot study, is seen in Table 2.

Table 2. Percentage Levels of Technophbia in Males and Females

Level of Technophobia	CARS - C		CTS - C		GATS - C	
	Male n=46	Female n=78	Male n=46	Female n=78	Male n=46	Female n=78
No	70%	54%	9%	13%	14%	14%
Low	12%	22%	15%	17%	43%	38%
Moderate/high	18%	24%	76%	70%	43%	48%

As shown in the Table 2. females from the sample population were more technophobic than males. From other hand, clear indication we can see in the no technophobia level as well as moderate/high level of technophobia. Essentially in all levels and all categories are shown the diferences among male and female results.

By analyzing the correlation coefficient among women, got the data that between age and anxiety, thoughts and attitudes there are weak positive and statistically significant correlation (r = 0.21; r = 0.34; r = 0.24; p <0.05), while men statistically significant correlation was obtained only between age and anxiety (r = 0.26; p = 0.04). Among age and the age and thoughts and attitudes were no statistically significant correlation (p> 0.05).

This study has such limitations as relatively small number of participants and a little variables.

5. Disscusion

There is not too much research for the older adults and techophobia. In this study shows that approximately half of the sample show moderate/high levels of technophobia. When compared with similar studies in other countries, we can see a wide diapason of technophobia levels. From other side, these results are comparable with previous research (Hogan, 2008; Weil and Rosen, 1995; Anthony, Clarke & Anderson, 2000; Weil & Rosen, 1995).

Age and gender is one of the most studied variables in technophobia research. Previous studies have shown variable results as different is human nature in general. Some of them showing gender differences while others do not (Rosen & Maguire, 1990; Ursavas & Karal, 2009).

This study shows that women are somewhat technophobic than man. It is interesting because situation in Latvia shows that women account for more than a half (53 %) of R&D* personnel. Similar proportion of women may be observed also in the number of researchers – 52 %, and other R&D personnel1 – 56 %. The proportion of women and men in the total R&D personnel (researches and other R&D personnel) has not changed for two succeeding years. From the other side, Latvian elderly population (aged 65 years and over) were born before the Second World War, during the war, or a couple of years after the war ended. It also largely determined by their educational opportunities, which have not always been favorable enough to obtain a high level of education. Therefore, in the age group 65 years and over is relatively high proportion of persons with primary education without regard to gender.

In accordance to a Hogan's study show that despite displaying higher levels of technophobia than older men, older women were no less likely to use computers than older men (Hogan, 2008).

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In the research what was performed in Turkey, according to results of statistical analyses, computer phobia of male pre-service teachers does not statistically vary depending on their gender. Although male preservice teachers have higher computer anxiety scores, they have lower computer thought scores. It was also observed that there is a negative and intensive relation between computer experience and computer anxiety (Ursavas & Karal, 2009). Technicians and equivalent staff, science supporting staff.

6. Conclusion

Results of this study indicate presence of Technophobia among middle-aged and older adults. The Technophobia test results shows technophobia presence in all three categories – Computer Anxiety, Computer Thoughts and Computer Attitudes. This study shows that women are somewhat technophobic than man.

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