
SMARTPHONE AND MOBILE APPLICATION USAGE AMONG SENIORS IN SLOVAKIA

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Abstract

The main purpose of the article is to find out how seniors use mobile digital technologies in Slovakia. At the theoretical level, authors examine how the generation of ‘digital immigrants’ differs from young people in terms of new technologies’ use and what are the greatest obstacles during learning to control them. This survey is the first phase of research on seniors’ education in the field of mobile applications in Slovakia. The results of this survey will help to build more effective didactics for seniors’ education

Keywords: smartphone, mobile application, digital immigrants

1. Introduction

Mobile applications can improve the quality of life not only in terms of communication, but also in education, information gathering and entertainment. In this paper, we are focusing on smartphone or tablet usage among Slovak seniors. We interviewed 374 seniors aged 60+ about their smartphone habits. Our survey has three main stages: 1) find out how many seniors use smartphones and if not what is the main cause, 2) find out what are they use smartphones for and what applications they use, 3) what are the main obstacles when using mobile digital devices.

2. Relationship between digital immigrants and new technology

The expansion and growing usage of new technologies such as personal computers, the Internet, smartphones and other digital era’s achievements have divided our society into two basic groups: digital natives and digital immigrants (in Marc Prensky’s understanding). The first ones are people who have no problem manipulating and using digital technology at all for entertainment, education or communication, etc. Digital natives do not consider smartphones as something extraordinary and all the new gadgets are a natural part of their life.

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On the opposite side, there are digital immigrants, adults and seniors. They need to adapt to changes in society, mainly driven by digitization and technical progress and to moving offline activities to online space. Within this division, there is also a group of digital settlers who lived in the analogue age and also have lived in digital age. They know how to use the internet and their information and communication technologies (ICT) skills are sophisticated but they still rely heavily on traditional analogue forms such as newspapers, magazines, CDs, and so on [1].

We are primarily interested in digital immigrants. They were born in a period of time when digital technologies were in an early stage of development. Marc Prensky compares the term digital immigrants with the term of real immigrants. According to him, digital immigrants are capable of adapting to the new environment which is the digital world at the same pace as if they were moving into the new country. It depends on individual person; some immigrants can assimilate faster, others slower. Although, digital immigrants do not have the automatic ability to work with digital technology, they can learn it. Prensky calls the accommodation to the new technology 'accent': every immigrant who learns the language of the new country will always remain a certain accent. In the case of digital immigrants, for example, they prefer to find some information offline before they go to the Internet or they read lengthy instructions on how to use a particular program than they would expect the program to teach by themselves. Digital immigrants prefer to print documents rather than read them on the monitor. The process of adapting to new technologies or learning how to handle new technologies is like learning a new language. The foreign language, whose rules and vocabulary is acquired by a person later in adulthood, is deposited in another part of the brain. This is also the case with digital skills: digital immigrants store them in another part of brain. The neuroplasticity of brain has impact on education in ICT which is reorganization of brain cells during life based on external perceptions. This means that if we learn how to control smartphone, new nerve connections appear in our brain while others remain weakened (for example, slower handwriting). Neuroplasticity is also related to the process of learning. Social psychologists claim that way of thinking and logic depends on their family/school background. Today's children grew up in the environment of computers and digital technologies and the Internet. It means that they think differently than digital immigrants [2].

Digital immigrants perceive digital space in a completely different way than digital natives. They cannot imagine sharing so much private information on the Internet with such a high frequency. Unlike natives, they do not live their lives online; they distinguish between experience in the real world and virtual one.

Molnar, Szuts, and Nagy draw attention to the fact that digital immigrants are slowly becoming strangers in their attempt to be accepted in a certain group of people. For example, digital natives make up only $\frac{1}{4}$ of the population of USA but social components such as marketing activities, ICT companies and the modern education system put much more attention on them. Others become

strangers or they adapt to the situation, even if digital immigrants have built up the current world of digital natives [3].

Although many digital immigrants do not trust new technologies, they can be a tool for improving of living standards. Future technology could help physically weak elderly people or to seniors with memory deficits. New technologies can help them communicate with other people even when they are attached to their homes. It also involves development of applications that can monitor the health of individuals through the Internet. In Japan or Western Europe, we are also talking about building smart houses that would make life easier for elderly people than in retirement facilities. On the other hand, flexible and useful technology can make the life of seniors more complicated than simpler. Even more, a senior exposed to new technologies, unable to work with them, may feel inferior and dismissed from society [4]. Although not undermining the relevance of traditional media sources, possessing certain technical skills to easily access today's digital technologies enables citizens to engage with and participate in almost every level of public life, from social networking to eGovernment. Individuals who are not equipped to utilise digital technologies are inevitably isolated from this aspect of media flow, along with facing the additional negative effects of being solely reliant on traditional media to obtain information [5].

Talking about digital immigrants, it is important to mention two terms: digital divide and digital literacy. Digital divide is a phenomenon where a certain group of society or individuals are almost in no contact with new technologies (ICT, the internet, smartphones), especially for financial, social, regional, educational or health reasons, but mainly due to the higher age or absence of relatives - children and young people who could teach seniors. We are talking about the absence of digital literacy. The solution is training in this area on the institutional level [6]. Digital literacy is understood as a set of technical abilities and skills related to the use of ICT. It is ICT, their introduction into the education system and their usage to achieve specific objectives that is the subject of modernisation in media education and in education in general [7]. Digital literacy is the ability to acquire and use technical and cognitive knowledge to use new digital technologies to search for and use diverse information. Digital literacy also includes the proper use of computers, smartphones or tablets, as well as their software and applications, as well as safe Internet handling, based on critical thinking. Another term for digital literacy is media competence, which includes the development of the competence of an individual in the media. The aim is to acquire a comprehensive ability (qualification) in working with the media, which consists of knowledge, practical skills, abilities and attitudes in relation to the technical and content pages media products which mobile applications certainly are [8].

Regarding the development of digital literacy, Petranová refers to Prensky, highlighting the concept of learning by doing, which should raise the interest of seniors in modern digital ICT technologies, as well as participation in the production of media product [9].

2.1. Digital immigrants and mobile applications

We suppose that seniors and elderly people want to learn to work with new technologies. It opposes the stereotyping of older people and their unwillingness to learn new things. For example, this is confirmed by the fact that the number of seniors using the Internet is growing (see Table 1).

Table 1. Internet Usage among seniors in Slovakia. Eurostat.

Seniors and the Internet				
The share of seniors in the total population	Slovak Republic		European Union	
Population 65+ (2014)	13.5%		18.5%	
• prediction: 2080	35.9%		28.7%	
Population 80+ (2014)	3.0%		5.1%	
• prediction 2080	16.3%		12.3%	
Internet usage by seniors* aged 65-74	2005	2014	2005	2014
Sending/receiving emails	68%	73%	81%	86%
Online shopping	9%	17%	32%	42%
Social media usage	-	20%	-	23%
Searching information about products and services	49%	65%	71%	79%
Internet banking	0%	32%	41%	52%
Reading online news	28%	67%	23%	60%
Internet usage by seniors	1%	31%	12%	42%

*they have used the Internet at least once during last three months

Additionally, up to 40% of Slovak seniors own smartphones, which is confirmed by the survey of the Internet shop Heureka.sk from 2014. In addition, 18% seniors own the tablet. Around 51% respondents (e-shop visitors) have neither smartphone, nor tablet [*Smartfón vlastní až 40 % slovenských seniorov*, Tlačová správa, 29.01.2018, <https://www.heurekashopping.sk/pre-media/tlacove-spravy/article/smartfon-vlastni-az-40-slovenskych-seniorov-nakupujucic-h-v-e-shopoch-10350>].

University of Edinburgh's study shows that using smartphones or tablets is important for senior's lives and they want to learn it for a number of reasons: assimilation with the modern world and understanding younger members of the family or quick access to information. They also appreciate the improvement of cognitive functions, but on the other hand, they are afraid of worsening memory capacity, as tablets can remember a lot of information.

Lack of internet sites such as doctor appointment ordering or various bureaucratic issues handling may be the obstacle for using ICT by seniors. We believe that these services will also grow in Slovakia, as they are already quite developed in the private sector (e-shops, e-banking, etc.).

Other barriers or disadvantages of using tablets or smartphones have been revealed by the Focus Group study of the Edinburgh University. Seniors included among limitations mainly professionally written instructions for operating devices which they did not understand and also absence of person who can teach it. Even if they have a helper, that person preferred to solve the problem on their tablet or smartphone without explaining it to senior. Fear is another reason for not using these technologies. Seniors are afraid of being lost in smartphone or tablet and they will not be able to signed out/exit the application/website, etc.

Of course, barriers include health issues that can affect work with the mobile phone directly and indirectly. For example, directly we are talking about a visual defect, indirectly, it is the overall negative feeling of life related with illnesses which stops seniors from learning new knowledge. The prices of ICT devices, which are higher, have also negative impact. Especially in Slovakia, the standard of living for retirees is low and they often have to live below the subsistence level if they have not saved enough money for retirement during active life. According to survey conducted by Slovak national association of human rights 60% of Slovak seniors live on the edge of poverty [*Chudoba a sociálne vylúčenie starších osôb na Slovensku*, 29.01.2018, http://www.snslp.sk/CCMS/files/Chudoba_socialne_vylucenie_starsich_osob_2016.pdf]. Apart from the obstacles, seniors have also identified several disadvantages of using the tablet or smartphone, including the over-complexity and functionality of the devices. They expect more user-friendly environment. Seniors also worry that tablets or smartphones are replacing socialization in the real world [10]. Writing on the web or in an application (Messenger, Viber, etc.) may be difficult for the older generation. Especially when the letters are tiny, it may cause different typing errors, but this can be solved by installing specific keyboards into mobile operating system operating systems.

3. Survey results

Research sample consists of 374 seniors at age of 60-88 years from all over Slovakia. Seniors involved in this survey are members of daily seniors' centres organised by Slovak seniors' association. We cooperated with eight branches copying eight Slovak municipalities to get information and opinion from all parts of Slovakia. The survey was conducted personally during January-March 2018. Survey has 15 questions focusing on user habits of seniors relating to smartphones usage. We want to find out how often seniors use smartphones, how they learned to control them and what are the main obstacles using smartphones.

Most of seniors own mobile device (smartphone, tablet or the so called feature phone). Only 1% respondents have classic analogue home line instead of using mobile device. A classic feature phone is used by 55.6% of respondents, but another 6% of seniors own both a classic phone and tablet (for fun, games, reading) and 3% of seniors own a classic mobile phone and a smartphone, too.

In this case they have classic feature phone because they feel more secure using smartphone knowing there is also a normal phone they perfectly know to use.

Smartphones are used by 25.3% of the respondents, but another 8.1% of respondents together with the smartphone also use the tablet. Smartphones are more likely to be owned by women, as a result of communication with family. The older the person is the lower chance of having a smartphone or tablet. The reason why younger seniors have smartphones might be the generation of their children. They already had their first experiences with mobile devices and their older used smartphones or tablets have just passed on their parents or persuaded them to buy this device because they know it is helpful.

Half of seniors do not use smart mobile device. The most common reason for the absence of a smartphone or tablet is that they do not feel the need of such a device (48.1%). Another 18.5% of respondents think smartphones are expensive, 11.1% do not like modern technology, 7.4% cannot work with a smartphone, and fears working with it. 3.7% of respondents have no training in smartphone control. These results are quite surprising. Literature suggests that the main factor of not having smartphone or tablet is fear. In our case, however, seniors do not realize the need for smartphones in everyday life because half of seniors without smartphone do not need such a device. It should be one of researchers', social workers' and media literacy lecturers' goals to enlighten seniors about usage possibilities of smartphones in everyday life as well as about considerably lowering the prices of these devices.

When it comes to learning the ability to control the mobile device, most of the respondents said that they were taught by relatives to use the smartphone. The most common teachers are children (44.2%), children together with grandchildren (18.6%) and 4.7% of seniors were taught just by their grandchildren. Even the number of relatives' engagement in senior education is remarkable, seniors claim that their children or grandchildren do not have patience to explain, and they are nervous, and this causes fights and decreases senior's learning ambitions. Surprisingly, up to 20.9% of respondents have learned to control the smartphone or tablet themselves. Only 2.3% of the respondents passed the course related to working with the touchscreen devices. It follows from the above that there is a need to establish an institutional framework for the education of a senior population in this area in the form of training courses and training of family members.

Smartphone and tablet use is also closely related to internet access and the use of various Internet services and websites, but many mobile applications are also connected to the Internet. We can say that a smartphone or tablet without the Internet is the same as using of classic feature phone. Internet connection is a determining factor in smartphone and tablet functionality. Based on the questionnaire, we can say that 65% of respondents have a data connection on the phone, 18.6% are reliant on WIFI in a household. Only 6% of respondents do not use the internet at all, and 2.32% of respondents join at least through public networks in cafes or public spaces and the like. As a result, seniors are ready to use the internet and also the online applications.

In the next step, we wanted to know how seniors use their smartphones. Phone calls dominate (100%), following the sending of sms (88%) and snapping photos (81.39%), while only 34.88% of the respondents uses smartphones for short video shooting. The smartphone clock is used by 74.41% of respondents and the alarm by 58.13% of respondents. The leader of online activities is news reading (53.48%) along with searching for information (51.16%). The communication via the Internet is very important part of young people's lives but seniors still prefer other types of communication. Only 23.25% of them use smartphone for communication and 18.6% respondents visits some of social networks.

Online maps are used only by 16.27% of seniors surveyed and 6.97% seniors use smartphones for purchases or services, which does not mean they do not shop for example on a desktop computer. 20.93% of respondents play games on their smartphones or tablets and only 6.97% seniors use other mobile applications (which we did not stated before). The reason why is the fact they do not know how to download them. Most of seniors use only pre-installed applications. We are talking about 72.1% of respondents using these applications who have never downloaded any application. The rest of the seniors have installed apps from Google Store or AppStore. 11.6% respondents said that apps were installed by their relatives, and only 16.3% of seniors can install the app themselves. Majority of respondents (65.1%) claim that they have enough features in their smartphones, 34.9% of respondents think there is way more apps they need (usually these seniors who do not have the Internet). Based on the data from these three questions, we can say that seniors' awareness of mobile apps and their usage is relatively low, seniors do not know how applications are being downloaded, and they do not know their potential, they even do not know which applications exist. Based on this information, we will need to make more effort to persuade seniors about the need to use some useful applications.

Because of the low functionality of smartphones, seniors spend very little time on them. 62.8% of respondents use the mobile device for up to one hour a day and 25.6% use the smartphone for 1-3 hours per day. 4.7% is mobile for 3-5 hours, especially those seniors who use social networks and as many functions as possible. Also, the same percentage (4.7%) use cell phone or tablet only if there is a need and enough time. Only 2.3% respondents have the feeling of being constantly on the phone typical for younger generation.

Smartphone or tablet control is diametrically different to the classic keypad. In addition to the fact that some seniors are mentally trying to adopt new things, including mobile devices, many suffer from arthritis or other diseases that cause trauma or weakness of the hands and joints. Smartphones are also relatively large and heavy compared to classic feature phone, which complicates their holding. We were interested in how seniors perceive the control of digital mobile devices. However, 58.1% of respondents do not have the slightest difficulty in controlling the smartphone or tablet, even 20.9% of seniors consider control as intuitive, and 2.3% of respondents said both. This means that about 80% of seniors do not consider smartphone control to be difficult. Only 14% feel

that the control is difficult because the touch screen is impractical and the seniors often compress what they do not want, with an error. This is a very positive finding for mobile application's education: seniors do not have problems in basic tasks like managing their devices correctly and quickly.

It is also very important to know how seniors can deal with a possible failure when using a smartphone, or if the user cannot get further, because he has come to an unknown environment on the device. The results are really diverse and there is no universal solution in this case. 32.6% of the respondents are waiting for someone to fix the mistake before they do it by themselves. On the other hand, 30.2% of the respondents are actively trying to solve the problem, and another 30.2% solves the situation by switching on and off the device. The rest of the respondents are trying to use the combination of the above mentioned options. This finding is also positive for us, as only 1/3 seniors will need to explain during the training how to deal with problematic situations. Of course, it will be necessary to explain the basic methods of controlling individual applications (e.g. returning to the menu) to all participants.

What do seniors think about smartphones and tablets and their influence on society? Most seniors are convinced (68.3%) that mobile devices are useful, but people should not overdo them in terms of spending time and frequency of use. According to 17.1% of the interviewed, some people spend too much time with the smartphone which makes them addicted. As a result, we have denied a generally persistent view in society that seniors are avoiding new technologies. But they just need to get appropriate education in this field. 7.3% of respondents are afraid of health problems associated with excessive use of smartphones or tablets, and less than 5% consider that smartphones are part of modern life and their use is essential.

4. Conclusions

The main purpose of the article was to find out how seniors use mobile digital technologies in Slovakia. We interviewed 374 seniors aged 60+ about their smartphone habits.

Majority of Slovak seniors do not use smartphones because they do not need them. However, if we focus only on seniors who own or use smartphones or tablets, we see that the spectrum of daily consumption features is very narrow and only minimum of seniors use mobile applications outside of the pre-installed package. They use smartphones exactly like feature phones for making calls, sending sms, clock, etc. The reason why is that seniors think they do not need another apps and they do not know how to download them. As a result of the lack of application, the seniors spend one hour per day on average on their smartphones, so they do not create a strong and intense relationship based on smartphone or tablet habits. We believe that an intensive course could help improve the relationship of seniors with smartphones and mobile applications, as well as a patient lecturer. Majority of seniors is trained to control smartphone by their relatives (children, grandchildren) who are not generally patient as seniors

mentioned during the survey. Most seniors use the internet on the phone, which is a prerequisite for the installation and subsequent use of digital applications. The lack of basic knowledge of smartphone control was our biggest concern, but surprisingly, about 80% of seniors think smartphones are intuitive and have no problems with control, which is a prerequisite for the fast-tracking and fast-orientated control of applications in our future education experiment. On the other side, most of seniors cannot deal with possible unexpected situation as they prefer to search for help or just to switch off and switch on the device. Only 30% respondents try to solve the problem on their own.

Majority of seniors do not think smartphones have negative impact, they just think that overuse of them is dangerous which is very positive finding. We can build up on this positive attitude our next step of research which is educational experiment focusing on training of seniors in two ways: edutainment method and classroom method.

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