Reducing Digital Exclusion of Seniors - Exploring the Lasting Effects of Collaborative Training Sessions

Jesper Holgersson*, Max Ellgren**

*University of Skövde, School of Informatics, SE-54128 Skövde, Sweden, jesper.holgersson@his.se
**University of Skövde, School of Informatics, SE-54128 Skövde, Sweden, a15maxel@student.his.se

Abstract: Today's digital society is developing rapidly and the number of smart and innovative digital services is increasing every day. However, the rapid digitalization may also lead to the exclusion of some groups. Senior citizens are one of these groups at risk. The most common way of combating digital exclusion among seniors is to offer education and hands-on training. The short term effects of such education initiatives have shown positive results but the long term lasting effects of digital training have not been explored to any greater extent. Data was collected via semi structured interviews with seniors who had previously participated in training sessions targeting Swedish seniors with a desire to become more digital. The results show that although the immediate effect of participating in training is positive, more individualized training is needed to achieve a lasting effect.

1. Introduction

For a long period of time, the e-government research agenda has been heavily influenced by the question of how to increase citizens' uptake of digital service provided by public agencies (e-services). One major determinant for e-service uptake is digital exclusion. In short, digital exclusion may be about one out of two things, or a combination of both: 1) limited access to digital technology and a working digital infrastructure, e.g. access to digital devices and the internet; 2) limited abilities to use the internet and digital equipment in order to access digital service, such as services provided by public agencies to its citizens (Ebbers et al., 2016). Among digitally excluded citizens, seniors are an over-represented group. As an example, in Sweden, which is considered to be one of the world's most heavily digitalized countries, approximately 400 000 seniors never use the internet, although 98% of the Swedish citizens have internet access (The Internet foundation in Sweden, 2019). This in turn means that seniors miss out on digital opportunities, and risk being left behind as society

changes. This situation is problematic, not at least for government authorities striving for increased provision and usage of e-services. Senior citizens represent the group with the most need of public service, for example with respect to health-related services but at the same time, senior citizens use digital versions of such services the least (Nishijima et al., 2017). In several research initiatives, seniors have been asked regarding their motives for not using the internet and e-services. Commonly mentioned arguments are: 1) A negative attitude towards internet, often associated with a general anxiety for using digital technology; 2) A sense of feeling too old to learn how to use digital technology; 3) Lacking knowledge and experience of using digital technology; and 4) Traditional literacy issues in terms of elderly citizens having problems with reading and writing (Holgersson and Söderström, 2019). The term senior is not a definite concept and different research initiatives use different definitions of when one become a senior. In Sweden, the age of retirement most often is 65 (The Swedish Pensions Agency, 2018) and since the research in this paper is based on Swedish retired citizens, seniors in this paper refers to citizens with the age of 65 or above.

It can be concluded that increased uptake of e-services in combination with reduced digital exclusion may bring a number of potential benefits for senior citizens, such as reduction of social isolation, IT-supported communication with friends and family, active participation in an increasingly digitalized healthcare system, and prolonged independence and improved cognitive abilities (Niehaves and Plattfaut, 2014). Moreover, reduced digital exclusion of seniors may also contribute to increased sustainability in public agencies provision of e-service when other service channels are used less frequently (Srivastava and Shainesh, 2015). In order to reduce digital exclusion among seniors, the most common actions proposed are education and training. Though there are a number of research initiatives highlighting the importance of training and education, there is a need for more consistent and robust evaluations of such interventions. The immediate effects of training seem positive and promising, the seniors feel more involved and brave enough to start using the Internet to a greater extent than before (Mok and Leung, 2012, Söderström and Holgersson, 2018). However, at the same time, little research is to be found exploring the long-term effects on seniors' digital habits. A notable exception is presented by Söderström and Holgersson (2018) but the results presented are based on a small sample of respondents and the results are therefore hard to generalize. It can be concluded that there is a need for more robust long-term follow-ups with larger samples of respondents. The aim of this paper is therefore to explore to what extent seniors who have participated in training and education initiatives have changed their digital behavior and habits seen from a long-term perspective. Furthermore, the paper aims to explore seniors' opinions on how digital training initiatives can be enhanced in order to promote digital inclusion of seniors.

2. Research Approach

In order to be able to explore the long-effects of seniors' digital behavior we adopted a qualitative interpretive approach (Klein and Myers, 1999, Walsham, 1995). We did so since our main research interest lied in exploring and analyzing the seniors' perceptions of their own digital habits and how these habits had changed after having participated in a digital training session. This approach made it possible to dig deep into the respondents' arguments and motives regarding their own perceptions

of their digital behavior. Data collection was made via semi-structured telephone interviews following a basic interview guide where a set of themes were discussed with the respondents:

    i) The respondent's perception of changed digital habits before and after participating in the educational program and the respondent's perception of the amount of digital services used before and after participating in the educational program.

    ii) The respondent's perception of their need for additional training in order to become more digitally independent.

    iii) The respondents' recommendations for how to design future education initiatives targeting reduced digital exclusion among seniors.

In total, we interviewed 35 respondents. The interviews were held by telephone due to geographical distances. Each interview was first recorded and then transcribed before being analysed. All respondents were seniors (i.e. 65 or older) and had previously participated in an educational program arranged jointly between Swedish municipalities and Telia Sweden AB[1]. The educational program was constituted by a three-hour training session and was directed exclusively towards senior citizens who had an interest in becoming more digital. During the training session, the participants were distributed over a set of tables. Each table had computers, a supervisor employed by the current municipality, and high school students who acted in the role of digital natives. The basic idea was to enable the younger generation to learn seniors about digital technologies and services and they did so in response to what questions the seniors might have. The questions ranged from how to use Google and internet in general to specific needs such as starting an e-mail or Facebook account, as well as how to stream TV-series and participate in an internet auction. The interviews were conducted approximately two months after the training session, thus enabling the respondents to reflect upon what they learned during the training session as well as how their daily life had been affected in terms of using digital technology and services if compared to before partaking in the training session.

3. Results

Based on the three themes that served as a basis for the interviews, we grouped the results accordingly.

3.1. Changed Digital Habits

Most respondents point out that their digital habits have not been changed to any greater extent, at least not to the degree that they themselves considered relevant enough to address during the interviews. Instead, the respondents experienced that participation in the training session did not add much new knowledge that they previously were unaware of. However, they stated that they often had picked up something, but they could not say exactly what it was and they did not experience any major change in their digital habits after participating. Most of these respondents

---

[1] Telia Sweden AB is Sweden's largest telecom operator. Telia AB sells connections in fixed telephony, data communications, Internet, digital TV, IP telephony and mobile telephony to private individuals, companies and organizations.

exhibited a basic pre-knowledge of digital technology. They, therefore, felt that the knowledge level on which the training session was targeting was a bit too low and general. According to these respondents, it would have been more effective if more participants which a similar competence profile would have been grouped together instead of being randomly distributed together with others with a wide range of basic digital competence. We use the following quotes as illustrating examples of such reasoning: "*I thought I would get more deep insights*", "*Maybe I learned something but not that much, I had a pretty good idea from the beginning*", "*No, I don't think it gave me anything I didn't know already*", and "*Sure I got some updates but I can't say that I learned anything new*".

However, some exceptions were found where changed digital habits were exhibited, not at least concerning a reduced fear and anxiety of using digital technology, as the following quotes indicate: "*Well before [participating in the training session] I didn't dare to go out on the internet but now I have more knowledge and I dare*", "*It turned out that it wasn't so dangerous so to speak. That you might dare a little more when these young people [the digital natives educating the seniors] show how it works*". From what can be interpreted out of the latter quotation, the social aspects of the training session were important and the personal contact with the young digital natives along with practical training seem to be important drivers for the increased interest in using digital technology, even if the digital habits were not changed to any greater extent.

3.2.   Interest in Partaking in Upcoming Training Sessions

Given the sparse exhibited changes in digital habits, surprisingly many of the respondents stated that they considered the training session as successful in preventing digital exclusion. The result can be seen as contradictory as the majority of the same respondents had previously claimed that their habits had not changed significantly. How, then, can they claim that the training session was actually rewarding and had succeeded with its original goal of reducing participants' digital exclusion whereas any substantial changes in digital behavior were missing for most respondents? Although the outcome of the training session was not necessarily rewarding for the individual respondents, they found that the occasion itself was generally very rewarding for the other participants at the training session. It seems that the training session managed to succeeded in including practical training and social contacts, both between educators and other participants, in a satisfactory way, as the following quotes indicate: "*You got to test things and then do it yourself so to speak, practically, otherwise it is difficult to learn such things. Just watching when someone else does, you don't really learn that at my age anyway*", and "*We [the seniors] are a group that has not grown up with digital services in the same way as young people today. So mixing high school youth and senior citizens was a very nice way to go*".

A general observation is that interest in participating in further training initiatives seems to some extent depend on skills since before and after the training. Those who already perceived themselves as knowledgeable do not see further training as equally relevant for themselves but at the same time they consider the training session as a good initiative for seniors who have had a hard time adjusting to the digital society. One respondent who was experienced and comfortable in using digital technology and services already before entering the training session pointed out that the training session was, according to the respondent, very instructive for the more troubled and uncertain participants who had limited previous experiences: "*This digitalization of the society has really gone too fast for the older generation, I myself belong to the older generation. I am 83 years old this year and there are*

many in my generation who have no opportunities whatsoever to use it [digital] and who are not able to learn it either, and then society must still take these people into account. You can't just ignore them and say that "you can search this on the internet" or that "you can go in there and do it", and so it has almost become in some areas". It is clear that those respondents who rate themselves on the lower side of the competence scale are in need of training initiatives in order to become more independent and self-confident. Further education initiatives are needed in order to stimulate continuous and long-term competence development of seniors which in turn will enhance the possibilities for substantial changes in seniors' digital behavior. Additional training sessions would also allow for returning participants to ask more specific and advanced questions based on their new insights in digital technologies, which was also something that many of the respondents themselves raised during the interviews. One of the respondents was convinced that there was still a lot to learn and was positive towards further education initiatives in the future: "*Yes, absolutely [about participating in further training sessions]. I am absolutely convinced that I use an incredibly small part of my phone and everything that it does. At my age you have to take a little at a time, so I would very much like to take another step*".

3.3. The Respondents' Recommendations for Future Training Initiatives

When it comes to the seniors' recommendations for how training initiatives should be designed in order to promote enhanced digital habits, the respondents had several suggestions. Despite the lack of substantial changes in digital habits, a clear majority of the respondents had a positive attitude towards the training session itself and would be recommending future opportunities to needy acquaintances. Those respondents who did not choose to recommend the training session considered that all the acquaintances they knew were already sufficiently knowledgeable in the subject and that the opportunity would therefore not be rewarding for them. However, although the training initiative as such was well received by the respondents, they had a number of suggestions and recommendations for any potential upcoming training opportunities. One of the most sought-after changes to emerging opportunities was to reduce the number of participants per group/table and potentially base these smaller groups/tables on the participants' level of knowledge. When the groupings within the training session in which the respondents had participated did not take into account the different knowledge levels of the participants, frustrations arose within the groups, which was most often reflected in the questions asked by the group members. Questions asked by one group member did not necessarily have to be relevant to the other group members and what they wanted to address. This, together with the limited time available, led to a number of different annoyances for several of the participants, or as one of the respondents puts i: "*Well you might try to have less people at each table so that each participant got a little more time to ask questions. We were three participants around the table and one of us took up most of the time with questions that I didn't perceive as valuable. I tried to tell the participant that I didn't think all those questions were relevant but it didn't help*".

4. Conclusions

The main results point out that the training initiative as such was rewarding and informative, but during the time (two months) between the training session and the interview, just a few of the respondents exhibit any changes in terms of digital behavior. This indicates that the training session initially succeeded in educating its participants while failing to influence them in a long-term

perspective. It is clear that the respondents' previous knowledge about digital technology brought into the training sessions is of importance. Either the initial competence among the participants has been so low that the training session did not help to raise the digital competence enough to bring a lasting change in digital behavior or otherwise the digital competence has been too high which has limited the opportunity to gain any new insights for the participants. As such, we can conclude that the results obtained in this paper partially contradicts with the results obtained by Söderström and Holgersson (2018). There might be several reasons for this contradiction but it is important to point out that the sample of respondents in Söderström and Holgersson (2018) is limited. However, it should be noted that the setting in which the training session is arranged might affect to what extent the participants actually enhance their knowledge. Even if the basic setup of the training sessions have been the same for all municipalities the sessions have not been arranged precisely the same, e.g. the premises have not been exactly the same, the training sessions have been facilitated in different ways, and the personal chemistry between the tutors/digital natives and the participants might have differed. Such factors might affect the end result of the training and should be analysed further.

In addition, we have found concrete suggestions for how to re-design the current training sessions as well as how municipalities should plan ahead in future education initiatives. Among the respondents it seems clear that the current version of the training session in which all respondents have participated could be easily improved in order to enhance the learning curve for all participants. Adjustments such as smaller groups of participants who have the same basic digital competence are commonly mentioned suggestions for improvement. Moreover, it is clear that one single training session is far from enough for most seniors, in particular those who have an absent or very limited digital competence. It is important that the municipalities arranging training sessions are aware of and plan ahead how further training sessions should be conducted. Instead of arranging one lavishly large intervention aimed for everyone, municipalities should prepare training programs based on the needs of the recipients of such initiatives. As pointed out by several researchers, fear and anxiety when using digital technology is a major barrier for senior citizens with limited digital experience (Holgersson and Söderström, 2019, Hill et al., 2015). Thus, one form of training program might address the needs of seniors with limited digital experience whereas other forms of training programs should address the needs of more digitally experienced seniors. In order to allow long-term substantial changes in digital habits among senior citizens there also have to be long-term planning for how to stimulate such as change.

References

Ebbers, W. E., Jansen, M. G. M., & van Deursen, A. J. A. M. (2016). Impact of the digital divide on e-government: Expanding from channel choice to channel usage. Government Information Quarterly, 33(4), 685-692.

The Internet foundation in Sweden. (2019). The Swedes and the internet. Retrieved May 7, 2020, from https://svenskarnaochinternet.se/rapporter/svenskarna-och-internet-2019/

Helsper, E. J., & Reisdorf, B. C. (2017). The emergence of a "digital underclass" in Great Britain and Sweden: Changing reasons for digital exclusion. New Media & Society, 19(8), 1253-1270.

Hill, R., Betts, L. R., & Gardner, S. E. (2015). Older adults' experiences and perceptions of digital technology: (Dis)empowerment, wellbeing, and inclusion. Computers in Human Behavior, 48, 415-423.

Holgersson, J., & Söderström, E. (2019). Bridging the gap - Exploring elderly citizens' perceptions of digital exclusion. In Proceedings of the 27th European Conference on Information Systems (ECIS), Stockholm & Uppsala, Sweden, June 8-14, 2019.

Janowski, T. (2015). Digital government evolution: From transformation to contextualization. Government Information Quarterly, 32(3), 221-236.

Klein, H. K., & Myers, M. D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. MIS Quarterly, 23(1), 67-93.

Mok, K. H., & Leung, D. (2012). Digitalisation, educational and social development in Greater China. Globalisation, Societies and Education, 10(3), 271-294.

Niehaves, B., & Plattfaut, R. (2014). Internet adoption by the elderly: employing IS technology acceptance theories for understanding the age-related digital divide. European Journal of Information Systems, 23(6), 708-726.

Nishijima, M., Ivanauskas, T. M., & Sarti, F. M. (2017). Evolution and determinants of digital divide in Brazil (2005–2013). Telecommunications Policy, 41(1), 12-24.

Srivastava, S. C., & Shainesh, G. (2015). Bridging the service divide through digitally enabled service innovations: evidence from Indian healthcare service providers. MIS Quarterly, 39(1), 245-A219.

Söderström, E., & Holgersson, J. (2018). Ökat digitalt innanförskap för äldre. Retrieved May 7, 2020, from Skövde: http://urn.kb.se/resolve?urn=urn:nbn:se:his:diva-16698

The Swedish Pensions Agency. (2018). Svenska Pensionsmyndigheten. Retrieved May 7, 2020, from https://www.pensionsmyndigheten.se/other-languages/english-engelska.category.english-engelska#pm-category-filter-last-card

Walsham, G. (1995). Interpretive case studies in IS research: nature and method. European Journal of Information Systems, 4(2), 74-81.

About the Authors

Jesper Holgersson

Jesper Holgersson, PhD, is a Senior Lecturer in Information Systems at the Department of Information Technology at University of Skövde, Sweden. His research interests are primarily focused on user centeredness in systems development, particularly in public sector digitalization.

Max Ellgren

Max Ellgren, BSc, is a former undergraduate student in Information Systems at the Department of Information Technology at University of Skövde, Sweden. His research interest mainly lies in how digital inclusion of senior citizens can be promoted.