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EXPLAINING NON-ADOPTION OF ELECTRONIC GOVERNMENT SERVICES BY CITIZENS.

A STUDY AMONG NON-USERS OF PUBLIC E-SERVICES IN LATVIA¹

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Abstract

This paper analyses citizen motives for not using electronic government services. Using qualitative interviews among users of Citizens' Service Centers in Latvia, this paper analyses the motives of citizens who do not use electronic government services but rely on non-electronic equivalents or on in-person assistance. It expands the literature on e-commerce and e-government through an explicit focus on non-adoption rather than adoption. Findings show a higher than expected importance of hardware and internet availability, as well as the importance of convenience factors for non-adoption. Furthermore, the research reveals that the well-intentioned supply of non-electronic alternatives may hamper the take-up of e-government. Several recommendations for the further development of electronic government services follow.

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1. INTRODUCTION

Governments increasingly employ electronic services in order to improve processes and reduce costs and red tape (Da Silva, Magnus, Silveira, & Maciel, 2013). Despite these investments, a sizeable group of citizens fail to adopt electronic government services and continue using physical equivalents (Carter & Weerakkody, 2008; Carter, Weerakkody, Phillips, & Dwivedi, 2016). This non-use of electronic government services is generally explained by referring to a lack of ICT skills, concerns about privacy and security, or to the user-friendliness of e-government applications. However, such rational explanations are unsatisfactory to explain non-adoption and tend to result in policy recommendations that emphasize information provision and the technical improvement of interfaces. This paper examines the underlying motives of non-users, by conducting interviews.

This study expands the current literature on the adoption of electronic services in three different ways. First, it expands the work on e-government adoption, which has mainly analyzed why government organizations switch to electronic delivery (or why not), the personal characteristics of e-government users and non-users, and the reasons citizens give for using electronic services (Alzahrani, Al-Karaghoul, & Weerakkody, 2017; Meier, Ben, & Schuppan, 2013; Rana & Dwivedi, 2015). Very little of this work has looked into why people do *not* use electronic alternatives (see, e.g., Seo and Bernsen, 2016; Kunstelj et al., 2009). Most of the work uses quantitative surveys, often developed for applied research purposes. This means their focus is predominantly on the nuts-and-bolts of electronic services and the service experience instead of non-user attitudes.

Second, this paper contributes and expands the current work on e-commerce use and non-use. The predominant focus is on why organizations and companies adopt e-commerce, and less on why customers do so. Still, the work on e-service adoption by customers is quite well-

developed (McKnight, Choudhury, & Kacmar, 2002), and has already moved to the level of theory-testing. Few of these insights have infiltrated the research on e-government adoption and non-adoption.

Third, it expands the current research by studying non-users, whereas other studies have mainly looked at 'intention to use', and less at actual use. Our study differs from such work by explicitly selecting respondents based on their actual behaviors rather than intentions – i.e. they have already decided not to use electronic alternatives.

This paper proceeds as follows. First, we review some of the evidence on the use and non-use of electronic services, both public and private, to come to a summary of common motives for using or not using services. We then describe the specific case where this research is conducted and introduce the design and method of our research. This is followed by the analysis and discussion of the findings. Finally, we provide some evidence-based recommendations on how practitioners can increase the use of electronic government services among citizens.

2. WHAT DO WE KNOW ABOUT DETERMINANTS OF NON-USE OF ELECTRONIC GOVERNMENT SERVICES?

Many studies on the adoption and non-use of electronic government services use Davis' 1989 Technology Acceptance Model (TAM) (Meier et al., 2013). The model provides an attitudinal explanation of individuals' intention to use new technologies and is rooted in the theories of reasoned action (Ajzen & Fishbein, 1980) and planned behavior (Ajzen, 1991; Venkatesh, 1999). TAM predicts that citizens' behavioral intention to use new technologies is dependent on their belief that using the new technology will enhance performance (perceived usefulness) and that its use will be free of effort (ease of use). Venkatesh and Davis (2000) expand this model and argue that social influences (subjective norm, voluntariness, and

image) and cognitive instrumental processes also directly influence user acceptance of new technologies.

The TAM framework has previously been used to study the adoption of e-commerce (e.g., Gefen, Karahanna, & Straub, 2003) and e-government (e.g., Carter & Bélanger, 2005). Carter (2008), for instance, found that perceived usefulness, trust in the internet, previous completion of an internet transaction, and perceived ease of use are important factors in predicting intention to use. Of these, perceived usefulness is the strongest predictor. In this circumstance, Seo and Bernsen (2016) suggested that inhabitants of rural areas may perceive a higher usefulness, because their travel time to physical government locations may be higher. Findings are more mixed about the role of perceived ease of use of technology on behavioral intention to use electronic services., Carter (2008) found that computer self-efficacy did not significantly predict citizen intention to use new technologies.

Computer self-efficacy, citizens' assessment of their ability to use computers in diverse situations (Compeau & Higgins, 1995), has been explored in several technology adoption studies (Jeyaraj, Rottman, & Lacity, 2006; Mensah & Mi, 2017). In a review of 48 empirical studies on citizen adoption of IT innovation, Jeyaraj Rottman, and Lacity (2006) found computer self-efficacy to be a promising predictor of adoption. However, empirical testing thus far failed to conclusively support the positive effect of citizens' assessments of their own ability to use computers on actual e-government use (Carter et al., 2016; Mensah & Mi, 2017). In addition, the relation between the use of the internet for accessing e-government services and for other uses differs among socio-demographic groups, implying that higher internet use does not necessarily lead to higher e-government adoption (Taipale, 2013).

Trust in government is seen as an important variable in e-government adoption research (Alzahrani et al., 2017; Carter & Weerakkody, 2008; O. K. Lean, Zailani, Ramayah, & Fernando, 2009). Some studies argue that citizens have to trust government agencies to be capable of

providing digital services effectively and safely in order for them to be willing to take up digital services (e.g., Carter & Weerakkody, 2008). Alzahrani et al., (2017) distinguished four dimensions of citizens' trust in e-government: technical factors (ea. system, service, and information quality), institutional factors (government agencies' reputation and past experiences), risk factors (performance risk, security and privacy) and individuals' factors (disposition to trust, internet experience, and education) as determinants for citizens' e-government adoption. However, other studies have disputed these results and argue that citizen trust in government and citizen trust in electronic government services are two different things. Teo et al. (2008) found trust in government rather than trust in technology to be the most important driver of e-government adoption, whereas both Carter (2008) and Carter et al., (2016) find no significant relation between trust in government and intention to use electronic government services.

Carter and Bélanger (2005) investigated willingness to adopt e-government and identified, amongst other factors, compatibility as an important driver of willingness. Compatibility refers to whether the proposed interaction is "congruent with the way they like to interact with others" (Carter & Bélanger, 2005). This suggests that people who use e-commerce, e-mail with friends, etc., are also more likely to use e-government services. Also, Sung (2016) found that the proliferation of smartphone usage increased the digital skills of users and recommended that adoption-policies should encourage the usage of digital tools. Therefore, it is important to study the use of commercial e-services when one wants to obtain insight into the use of electronic government services. However, whereas e-commerce and e-mail are voluntary, the same cannot be said of e-government services. Furthermore, whereas businesses can choose their customers, governments must serve everyone.

In all, most of the work on citizen electronic services use and non-use is survey-based and quantitative (see Kunstelj et al., 2009 for a discussion), generally relying on a similar set of

constructs and theories (e.g., TAM, Hung, Chang, & Yu, 2006; Meier et al., 2013; O. Lean, Choudhury, & Kacmar, 2002). Most of these studies have devoted special attention to the socio-demographic characteristics of non-users and users, particularly in relation to the digital divide, but have not devoted as much attention to citizen motivations for use and non-use. In addition, the majority of studies have focused on users and easy-adopters, and less on non-users, with some exceptions (see Hung et al., 2006).

3. METHOD AND DATA

The purpose of this research is to study the motives of non-users of electronic government services, who tend to rely on a physical alternative instead. Particularly, we want to identify why Latvians make little use of electronically available services such as *latvija.lv* or the Electronic Declaration System, and why they decide to visit the State and Local Governments' Single Client Service Centers (CSC) instead of using electronically available services alternatives.

3.1 Case description

Data is collected in Latvian Unified State and Municipal Customer Service Centers (CSC) or *Valsts un pašvaldību vienotie klientu apkalpošanas centri* (VPVKAC), which help citizens in digital communications and electronic government services requests (Bertot, Jaeger, Gorham, Taylor, & Lincoln, 2013; Da Silva et al., 2013). The establishment of CSCs in centers of regional significance was started in 2015 and continues to this day. They operate in close cooperation with municipalities and provide state and municipal services for clients. Currently there are 72 municipal CSCs, where citizens and businesses can obtain municipal services, advice or apply for the services of eight state institutions (State Social Insurance Agency, State Employment Agency, State Revenue Service, Register of Enterprises, State Rural Support

Service, State Land Service, Office of Citizenship and Migration Affairs and State Labor Inspectorate). State and municipal services are available both in-person and electronically at the CSC's digital platform. Many of the services provided on this platform are related and citizens facing specific life situations, e.g. child birth, must apply for several services, provided by different institutions CSC personnel help find the requested services on the National portal *latvija.lv* and help customers use them. The work of these CSCs is centrally coordinated by the national Ministry for Environmental Protection and Regional Development (VARAM, 2017).

The National portal of Latvia (*latvija.lv*) is the largest and most convenient Internet information and services source provided by the Latvian State and municipalities. The portal provides information on the more than 2000 services and 100 electronic services offered by the State and local governments in Latvia. In order to effectively use the portal, citizens are requested to register first. Individuals can register using the following authentication tools: (a) electronic signature; (b) electronic ID or (c) via Internet banking (in case a person uses Internet banking the person does not need electronic signature or electronic ID). The following *latvija.lv*-related services are provided at the CSCs:

- Request services provided by municipalities and the 8 state institutions (State Social Insurance Agency, State Employment Agency, State Revenue Service, Register of Enterprises, State Rural Support Service, State Land Service, Office of Citizenship and Migration Affairs and State Labor Inspectorate)
- Receive consultations about e-services provided by municipalities and state institutions, as well as practical assistance working with computer, internet and eID card reader.
- Receive information and assistance on the use of computer, internet, eID card reader and consultative support about (electronic) government services (VARAM, 2017).

Customers of CSCs are characterized by their deliberate choice not to adopt administrative e-services but opt for the in-person alternative instead. As conscious non-users, CSC-customers form the ideally suited subject pool for a study into the non-use of electronic government services.

3.2 Design and questions

We opted for an explorative approach using short qualitative interviews. First, a significant amount of prior research has focused on early adopters of technologies rather than laggards. This means there is little consensus about the reasons for not using e-government services, and established questionnaires are not available. Where such material does exist, e.g. in studies on e-commerce, this material is not adapted to a public sector context. Second, we expect at least part of the respondents to be vulnerable in terms of self-efficacy and literacy, making a traditional questionnaire less suitable. Third, there is no list of potential respondents – this means for the researcher it is essential to go in person to the CSCs to contact respondents to invite them to participate in the study.

3.3 Selection of respondents

Respondents were selected using a two-step quota sampling design. In the first step a representative sample of CSCs were selected. In the second step a stratified quota sample of respondents was selected.

First, we selected the CSCs in which to conduct the interviews. Latvia has around 2 million inhabitants, of which one third live in the capital. Municipalities have on average 8900 inhabitants. There are a total of 75 CSCs, jointly operated by state and local governments. Of these centers, 3 are operated by various central government agencies, and 72 are municipal service centers located in centers of regional significance. The centers are distributed over

rural and non-rural areas and cover all five of Latvia's planning regions. We aimed at selecting a representative group of 8 municipal CSCs, both rural and non-rural, with a sufficient number of customers. We opted for municipal CSCs because they show institutional homogeneity and provide a similar range of services, unlike those located in larger cities. Furthermore, we excluded all CSCs that have been operational for less than one year. Seven out of eight CSCs were located in regions with fewer than 9000 inhabitants. The 8 CSCs selected were: Ape, Auce, Charnikava, Dagda, Roja, Salaspils, Strenči, and Viļaka (see table 1).

After having selected the CSCs, we proceeded with the stratified quota sampling in each of the eight CSCs. The stratifications are made based on age, education, income, and gender (table 1). To avoid bias, all interviews were conducted during lunch time or after working hours (but before closure of the CSC), the period when most customers go to the CSCs. In order to satisfy the quota requirements, it was necessary to visit some CSCs several times. Some additional selection criteria were used as well. We only included customers who wanted to apply for, or have rendered, government services (State revenue services, social security, etc.). Customers using non-digital services only were excluded. Secondly, only Latvian citizens or long-term residents were included. Expatriates, new immigrants, or exchange students could have reasons not to use electronic government services and are usually insufficiently versed in the Latvian or Russian vernacular.

3.4 Interview approach

All participants were asked the same two specific questions. Respondents were invited to explain and elaborate their answers.

1. Why do you not use e-services, such as online www.Latvija.lv, offered by the state or local government authorities?

2. Why did you decide to visit the State and Local Government's Single Client Service Center?

The two questions explore the same behaviors and motives. The reason for this repetition is to delve deeper into the respondent's motives. This approach also helps to find out whether reasons for not using the electronic alternatives to government services are similar to those offered for using non-electronic alternative. The literature reviewed earlier suggests there may be differences.

Respondents were asked to provide informed consent by signing an informed consent form. They were asked to allow for the interviews to be recorded on tape and the interviewers acted accordingly. In addition, the interviewer recorded the basic interview information, including the name of the interviewer, date, place, and interview start and end time. All interviews were conducted by two interviewers. The data was collected between March 27th and April 21st 2017.

3.5 Descriptive analyses

A total of 141 people were interviewed. Most respondents are between 25 and 65. This may be due to younger individuals being more well versed with computers and the Internet. In addition, younger people are not required to submit declarations to the State Revenue Service or request assistance from the Social Security Insurance agency due to their studies. Lower income categories are overrepresented, probably due to the overrepresentation of CSCs in remote rural areas where income levels are relatively low. In addition, more than half of the population of Latvia receives a below average salary. According to the Central Statistical Bureau of Latvia, 57.8% of women and 49.9% of men in 2016 received a monthly salary of between EUR 70,00 to EUR 700,00 (CSB, 2017). Furthermore, almost three quarters of the respondents are female. This can partly be explained by the active role women of Latvian

families take in issues related to Social Security Insurance Agency services and State Revenue Service or the precarious position of single mothers.

Five of the eight chosen CSCs are located in remote areas close to Latvia's borders: Viļaka CSC, is located near the border with Russia; Ape and Strenči CSCs are located near the border with Estonia; Auce CSC is close to the border with Lithuania; and Dagda CSC is near the border with Belarus. Two of eight CSCs – Carnikava and Roja, are located near the Baltic Sea. In all cases, CSCs are located in centers of regional significance. The size of seven selected regions range from 3444 inhabitants in Strenči to 8884 inhabitants in Carnikava. Only one, the Salaspils region, has 23432 inhabitants. Because most of the CSCs included in the study are located in rural areas, results relating to the income and education levels of respondents, as well as on the accessibility of computers and internet, could be biased.

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4. FINDINGS

The 141 short interviews provided a total of 279 text fragments to be analyzed. Contrary to our expectations, answers were often very short, precluding the initial decision to use qualitative data analysis software to analyze the material. Below we provide a descriptive analysis of the findings. We have also looked at whether reasons for non-use are related to socio-demographic characteristics using Chi² statistics and report relevant findings.

Familiarity with services under Latvija.lv

Of the interviewees, 17 per cent indicated they had already used Latvija.lv earlier for other reasons, and only two respondents indicated they were not aware of the existence of

Latvija.lv. This suggests that a lack of knowledge of electronic alternatives is not a sufficient explanation for the continued use of the CSC.

Skills

Almost one in three respondents reported reasons for non-use related to skills and competence, and the perceived lack of them. The technology makes them afraid, especially to make mistakes. Many of the people reporting a lack of skills also mention not having a computer. Respondents find the system too complicated, and in some cases contrasted electronic government service adoption with the simplicity of just visiting the CSC in-person. Yet, we do not find evidence that persons labelling the system as too complicated have tried to use the website before. This means concerns about the complicatedness of the system are likely to be a perception issue rather than an experience-related issue. This is additionally suggested by 16 out of 40 higher educated respondents mentioning skills and the complicatedness of the online system as a reason to visit the CSC. Six respondents indicated visiting the CSC in order to obtain information about using the online system. One respondent mentioned the lack of Latvian language skills.

System access and technical issues

Several respondents (N=11) mentioned a lack of internet access as a reason for coming to the CSC. Within this group, some respondents cited a lack of access to internet banking. One respondent reported not having access through the bank because of an unpaid loan issue with the bank (one of the most often used options to log in Latvija.lv is through the Internet bank). Three respondents cite a lack of identification devices to use the system, but all three also mention they were currently visiting the CSC in order to obtain a registration to use the system. In total, eleven respondents indicate visiting the CSC in order to obtain a registration

to use the system. One respondent cites a lack of access because he does not live in the country permanently (even though latvija.lv can also be used from abroad). Just under one out of five respondents cited the lack of a computer or related equipment as a reason to come to the CSC. We almost exclusively find this among older respondents. Just one of the respondents under 40 mentioned a lack of hardware as a reason to visit the CSC. There also is a small education effect. Predominantly, several respondents cited the lack of a scanner or scanning service as the reason to come to the CSC. In order to obtain the services mentioned, citizens have to upload income declaration or income statements to Latvija.lv. The reason they visit the CSC is to have this document scanned.

Convenience and support

About a third of respondents included references to a lack of interest or need to use the electronic service: they did not have to use it before and cite the easy availability of alternatives. They state it is still possible to submit required documents on paper, and that the CSC alternative was available and free, so they did not have to use the online alternative. Convenience of the CSCs was cited many times. This includes the convenience of dropping by at the CSC compared to using an online service that is perceived to be complicated. At the same time going to CSC requires more time and effort than using e-services from home or from office, but it seems that respondents did not acknowledge this. Respondents also mention geographic proximity of the CSC (to home and to the place of work) as a reason for using the CSC.

A related factor is that respondents can receive in-person help at the CSCs. Staff at the CSCs are seen to be specialists and knowledgeable. Three respondents also mention they trust the CSC employees. In-person assistance is appreciated for issues which are perceived to be complex. Respondents also cite the possibility to ask additional questions and to get additional

help, both about using the system and about the services sought. In some cases, expert assistance and in-person visits are cited in relation to a need to obtain a complex set of services. Such factors are mentioned by almost four out of ten respondents.

One respondent, a middle-aged woman, mentioned social reasons to use the CSC – the CSC is close to home and allows her to socialize and have a chat.

5. DISCUSSION

The analysis of non-adoption motives generally confirms the findings from the existing literature. It did highlight a number of specific findings, and drew attention to a difficult dilemma for public organizations wanting to stimulate digitization: should abundant offline alternatives be offered to guarantee broad access, or does this unduly hamper take-up of digital services? We discuss the findings in relation to the Technology Acceptance Model and earlier literature on the motives for adopting new (government) technologies.

Hardware and internet access remain an issue

The interviews revealed that a lack of computer or internet access remains an important reason not to use online services. This is a finding that has emerged repeatedly in research on non-use of digital series, even in highly developed countries where internet penetration rates are very high (see, e.g. van Deursen et al., 2006); This is especially the case for older individuals. Several of the centres are located in remote areas close to Latvia's borders. Broadband connections in these areas are not always available and existing connections and internet accessibility is not as good as connections in the cities. Also, people living in these areas have lower income levels and many households cannot afford computers and internet at home. According to the Eurostat, only 75% of rural households had access to internet by broadband connection in 2016 (Eurostat, n.d.). An eye-opening finding was also that several respondents mentioned the lack of scanning equipment as a reason to visit the CSC. One could

argue that this is not an issue related to technology access, but rather one related to poor service design where paper-based documents remain necessary even in an e-government context.

Access to the e-services requiring authorization on latvija.lv remains an issue for a lot of people who do not use and/or do not know how to use Internet banking, e-signatures and/or eID cards. Broadband availability in rural areas is relatively low.

Supplying alternatives may hamper take-up of online service

There are many CSCs, and more are planned to be opened in the future. The easy supply of this alternative identifies as a convenience for many people instead of using the service online. The fact that the offline alternative exists and can be used is an important reason to continue using it. Many people still consider the online alternative to be less convenient than going in person to the CSC. In the Latvian case, the high number of CSCs and easy access may be a factor in preventing people from switching to online services. The Technology Acceptance Model in this case suggests low perceived usefulness of the new technology, and an ease of use that is only marginally different from the existing widely available offline alternatives.

Offline services have a support function for making people go online

Several respondents visited the CSCs in order to register for access to services, or to ask questions. In-person help appears to be desired to make the transition to using online services. Offline offices may help citizens to make the step towards online service use. This is in line with earlier work that has shown that it is not the digital skills citizens possess that are essential in predicting citizens' online channel choice (Ebbers et al., 2016). This finding also suggests that trust in government, a factor that is often studied in e-government adoption research, is probably not a strong explanatory factor, because citizens do visit the physical government centers to directly interact with government employees.

In-person assistance remains essential

Respondents appreciate the possibility to ask questions and to receive professional advice. This not only related to complex cases, but also to more mundane issues when filling forms. Respondents are afraid of making mistakes and seek reassurance and have a perception that the online system will be too complicated. Even simple systems can be seen as complicated. The complexity of the electronic system and fear to make a mistake as well as lack of understanding of the procedure have a strong negative impact on the use of the electronic services. The website www.latvija.lv is quite complicated to follow and there are many steps to do before one can find and access the service. This means ease of use needs improvement, in line with the suggestions from the Technology Acceptance Model.

Public services also serve a social function

A final factor in rural areas is the desire to discuss the procedure in person and receive help. This is also a way of socializing. People like to go to CSC to find out about news in their area. Especially older people or those who are unemployed, who have more time can meet other people with similar problems and/or interests and discuss. This aligns with sociological research discussing the role of public meeting points in rural areas (Lægran, 2002), a function fulfilled by the CSC.

6. CONCLUSION

As local, regional, and national governments rely more and more on the electronic provision of government services, issues of non-use and non-take-up become increasingly salient. In order to expand citizen take-up of electronic government services, academics and

practitioners have to endeavor to gain a better understanding of why citizens fail to use electronic government services. This study conducted 141 interviews among users of Latvian Citizen Service Centers (qualified non-users) in order to enhance this understanding.

This study has some limitations. First, the study focusses solely on Latvian CSCs and might not be reproducible in other contexts. Further research should indicate how reproducible our results are. For example by researching similar samples of non-users in different context. Second, the study is based on a stratified quota sampling procedure. The respondents may be biased because of our sampling procedure. Further research could endeavor to use different sampling methods, both in qualitative and quantitative research, in order to find the causes of non-take-up of electronic government services.

Our specific focus on non-users revealed a higher than expected importance of hardware and internet availability, as well as convenience factors as important determinants for non-adoption. Furthermore, the study showed that the well-intentioned supply of non-electronic alternatives might hamper the take-up of e-government.

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TABLES

Table 1: Respondent characteristics

	N	%
<i>Interview location</i>		
Ape	20	14,2
Auce	19	13,5
Charnikava	20	14,2
Dagda	14	9,9
Roja	20	14,2
Salaspils	20	14,2
Strenči	16	11,3
Vīlaka	12	8,5
<i>Age category</i>		
under 25	12	8,5
25-40	39	27,7
41-65	75	53,2
over 65	15	10,6
Total	141	100
<i>Education level</i>		
basic	17	12,1
secondary	67	47,5
higher	56	39,7
other	1	0,7
<i>Income category</i>		
0-838	115	81,6
over 838	24	17
not indicated	2	1,4
<i>Gender</i>		
female	104	73,8
male	37	26,2
<i>Total</i>	141	100