The Efficiency of Freedom: Single Parents' Domestication of Mandatory E-government Channels

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Abstract

The Danish e-government strategy aims to increase the efficiency of public sector administration by making e-government channels mandatory for citizens by 2015. Although Danish citizens have adopted e-government channels to interact with public authorities, many also keep using traditional channels. Previous studies have analyzed citizens' channel choice in non-mandatory settings, and mostly surrounding a single isolated channel. To cover these gaps we present a mixed method study of citizens' actual use of e-government channels using domestication theory as our framework.

Our findings indicate that e-government and traditional channels are often used simultaneously, and citizens' perceptions and previous histories with public authorities influence channel choice. Further, citizens' existing routines related to third-party non-official channels also influence their interaction with public authorities. Moreover, we find a series of unmet needs which leads to information requests on traditional channels concerning online transactions. Based on the study we offer recommendations to practioners to increase the use of e-government channels and reduce traffic on traditional channels.

Keywords: channel choice, domestication theory, e-government, mandatory channels, offline traffic reduction, self-service applications, single parents

1. Introduction

The Danish e-government strategy has made government to citizen (G2C) interaction through e-government channels, such as websites and online self-service applications, mandatory by 2015 (The Danish Government, Danish Regions, & Local Government Denmark, 2011). The strategy aims to increase the efficiency of public sector administration by increasing citizens' use of e-government channels and reducing interaction through traditional channels. A new public authority, Udbetaling Danmark (UDK), was established in 2012 to achieve savings in the administration of public benefits through centralization and digitization. Interaction between citizens and UDK primarily takes place through the portal borger.dk (citizen.dk) and digital post, a public e-mail system, which replaces physical letters. The online system NemID handles identification. For personal assistance, citizens can call UDK or turn up at the municipalities' local service centers.

E-government studies have shown that supplying e-government channels does not ensure that citizens adopt them (Coursey & Norris, 2008), and that e-government channels tend to supplement rather than substitute for traditional channels (Pieterson, 2010; Reddick & Anthopoulos, 2014). These findings are similar to recent experiences from Denmark. In spite of having the highest e-government adoption rate in the EU, and e-government channels becoming mandatory, the Danes still use the telephone and counter turn-ups for G2C interaction (Kommunernes Landsforening, 2014; Statistics Denmark, 2014).

1.1 Purpose and research question

The research questions we seek to answer are:

- *How do citizens actually use mandatory e-government channels?*

- *How can studies of citizens' actual use contribute to improving e-government channels and reduce the need for traditional channels?*

By addressing these research questions and studying citizens' actual use of mandatory e-government channels we contribute to the CC field of e-government and fill existing gaps therein. Moreover, we respond to calls for qualitative studies on CC (Pieterson, 2010; Reddick & Anthopoulos, 2014). Finally, we offer specific recommendations based on actual use thereby accommodating criticism of the e-government field (Heeks & Bailur, 2007; Madsen, Berger, & Phythian, 2014).

We conduct a case study applying domestication theory as a theoretical lens. According to domestication theory people are not just passive adopters, but active subjects, who redefine technology to their own needs as they incorporate it into their everyday life (Silverstone & Hirsch, 1992, p. 16). Thus, domestication involves mutual processes, where technology shapes and is shaped by people's practices and values. This framework seems fitting for studying the actual use of mandatory technology, and when seeking insight into how and why this use deviates from the official requirements.

Our study revolves around family benefits, which a specific section of UDK manages. 'Family benefits' is an umbrella term for multiple benefits which parents with children under the age of 18 are legally entitled to. All parents are signed up for basic child benefits automatically. Single parents are entitled to special benefits as long as they do not live with other adults under marriage-like conditions. To retain the benefits single parents annually need to inform UDK that they are still single using an online self-service application. Single parents may also be eligible for additional benefits managed by different sections of UDK and other authorities. According to official statistics, Danish single parents have high access to ICTs, and are skilled and frequent users of online services, including e-government (Statistics Denmark, 2014). By focusing on them, we gain insight into a highly competent groups' actual use of e-government services, and post-adoption processes related to e-government. Most e-

government adoption and CC studies have taken place in settings where citizens have a free choice of channels, our study takes place in a mandatory setting, which adds to its novelty and contribution.

The next section presents e-government adoption and CC studies and identifies gaps herein. Section three presents domestication theory as the theoretical lens guiding our study while section four presents our methodology. Sections five and six present and discuss results. Finally, section seven presents concluding remarks, limitations and implications for further research.

2. Previous studies of citizens' adoption of e-government channels

In a literature review, Hofmann et al. (2012) identify two perspectives in studies of citizens' acceptance of e-government services. The first is grounded psychological theories seeking to predict human behavior and applies adoption models such as the Technology Adoption Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003), while the second is based on Diffusions of Innovations theory (Rogers, 2003). Both perspectives use variance models to test 'independent variables that cause variation in dependent variables' (Webster & Watson, 2002, p. xix). The independent variables known to influence the intention to use a new technology are citizens' perception of the e-government service; especially how easy to use and useful the technology appears to be, demographic variables such as age, gender, and education, facilitating conditions (help offered), and finally social influence (pressure to use the technology). E-government scholars have included additional variables beyond those known from the technology adoption literature. Carter and Belanger (2008; 2005) have found that citizens' trust in public authorities also influences the willingness to use e-government channels.

Hofmann et al. (2012) and Madsen et al. (2014) criticize the adoption studies for focusing on citizens' intention to use generic e-government services, rather than their actual use of real services, and of

ignoring specificities of the services in question. This limits the researchers' ability to offer practical recommendations. Moreover, the studies limit citizens' actions to either adoption or non-adoption of a single channel. Variation in use, citizens' inventions of new ways of using e-government services, and the interplay that can occur across channels are ignored (Madsen et al., 2014).

CC studies in e-government analyze citizens' and businesses choice of channels for interacting with public authorities. Madsen & Kræmmergaard (Madsen & Kræmmergaard, 2015) conducted a literature review of 36 papers on CC and multichannel management for G2C interaction. Of these, 19 studied CC at the level of the individual citizen, mostly through quantitative methods and statistical modeling of survey data. These studies are informed by TAM, marketing theory, and frameworks from media and communication theory, especially Media Richness Theory (Daft & Lengel, 1986), Channel Expansion Theory (Carlson & Zmud, 1999), and Uses and Gratifications research (Katz, Blumler, & Gurevitch, 1973). Like the e-government adoption studies, many CC studies use variance models. They test the impact of independent especially channel and task characteristics, demographic variables, and situational constraints on dependent variables; citizens' CC and satisfaction with the service encounter (Reddick, Abdelsalam, & Elkadi, 2012; Reddick & Anthopoulos, 2014; Reddick & Turner, 2012; Reddick, 2010). These studies show that websites are suitable when citizens need to look up information, but telephone or face-to-face conversation, which allow for direct interaction with a caseworker are preferred to handle more complicated problems. Results also indicate that channel characteristics are not fixed properties, but citizens' experiences with channels influence the perception of them and the willingness to use these channels again (Pieterson & Ebbers, 2008; Pieterson, Teerling, & Ebbers, 2008; Teerling & Pieterson, 2011).

By conducting group interviews Pieterson and van Dijk found that citizens are primarily guided by habits, and do not necessarily consider their options until problems arise (Pieterson & van Dijk, 2007). In a later study, Teerling and Pieterson (2010) conducted a field experiment and found that it is possible to change these habits and guide citizens to e-government channels through marketing.

In spite of these valuable contributions, several knowledge and methodological gaps remain. Few studies regard CC as a process, and many are based on analysis of secondary survey data. Such studies do not offer insight into the actual use that occurs after CC. Reddick acknowledges these limitations and calls for focus group discussions for in-depth examinations of how citizens perceive e-government services, channel switching, and CC in relation to mandatory tasks and services (Reddick & Anthopoulos, 2014; Reddick & Turner, 2012; Reddick, 2005). Pieterson & Ebbers (2008) suggest that observations and analysis of phone and desk conversations is used to gain insight, while Pieterson (2010) notes that more knowledge is needed about the actual needs, desires and behavior of citizens and the role emotions play with regards to CC. We will cover these gaps by applying domestication theory, which seeks to understand people's practices from the inside by analyzing the reasons people offer for their actions. This separates domestication theory from the e-government adoption and CC studies, which study these phenomena from the outside and seeks causal explanations through hypotheses testing and statistical modeling (Blaikie, 2012).

3. Theoretical lens: Domestication theory

Domestication theory studies the processes that take place after technologies are brought into households (Berker, Hartmann, Punie, & Ward, 2005). It is used to study how people make technology their own by adapting it to their values, interests, and routines. Domestication theory was developed by combining reception analysis and social shaping of technology studies (Haddon, 2007). Domestication theory regards the meaning of technology as a dynamic phenomenon continuously created through social interaction and use in everyday life. According to domestication theory users both shape and are shaped by technology through mutual processes of negotiation between the household members, the technology, and the outside world. Following this framework the actual use or perception of the technology cannot necessarily by anticipated by designers or policymakers. For citizens to use a channel they must first create a set of practices related to it, which must be seen to fit into the citizens' everyday life and routines related to G2C interaction. The framework for analyzing the domestication process consists of four overlapping aspects as shown in figure 1 (Silverstone & Hirsch, 1992). *Appropriation* covers the processes of negotiation and consideration whereby the technology is brought into the household and changes from being a generic commodity to an object of significance with a certain purpose for the household members (Haddon, 2011). *Objectification* covers the physical display of the technology; its placement and the status ascribed to it as an object in the household. Through this display, the household members reveal their values to others. *Incorporation* concerns how the technology fits into the habits and routines of everyday life. This aspect is especially important in the analysis of mediated content, which does not have a spatial extension, although it is accessed through physical media in the household (Silverstone & Hirsch, 1992). *Conversion* concerns how the household members share their use of technology with others, and make claims for status related to this use. These processes take place within *the moral economy of the household*, which describes the household as an

economic unit involved with transactions of goods and meaning with the outside world. The

transactions 'are defined and informed by a set of cognitions, evaluations and aesthetics, that are

themselves defined by the histories, biographies and politics of the household and its members.'

(Silverstone & Hirsch, 1992, p. 18). Hereby the household 'create and sustain its autonomy and identity

(…) as an economic, social and cultural unit.' (Silverstone & Hirsch, 1992, p. 19).

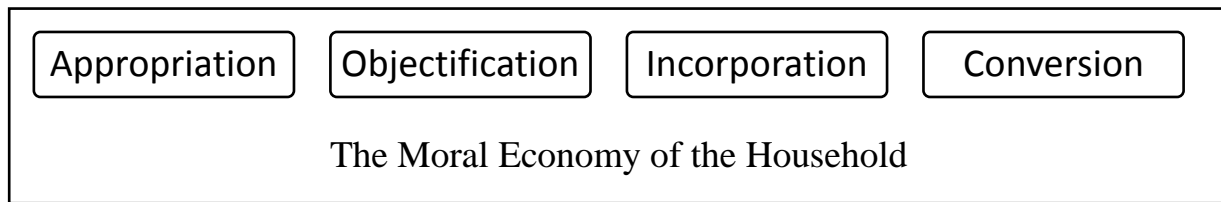| Appropriation	Objectification	Incorporation	Conversion
The Moral Economy of the Household			

Figure 1. The four aspects of the domestication process.

Although domestication theory has mostly been applied on physical technologies, studies have also

been conducted on non-physical content such as telephone conversations and television shows (Berker

et al., 2005) and within e-government for municipalities' supply of websites (Liste & Sørensen, 2015).

As mediated content is rarely displayed physically, but rather through incorporation into routines, we

will present the objectification and incorporation aspects together. Having presented our theoretical

framework we turn to how our empirical studies were conducted.

4. Method

As domestication theory has a strong emphasis on the construction of meaning the studies are mostly

conducted using qualitative methods (Haddon, 2011). Our study followed this tradition, but

supplemented the qualitative methods with quantitative traffic data, to provide an overview of citizens'

routines for interacting with UDK. The empirical studies covered three stages as presented in Table 1.

Table 1. Empirical studies

Stage	Method	Time frame
1. Data collection in UDK call center	• Co-listening to calls • Informal talk with caseworkers • Statistics on calls and website visits	April 2013
2. Focus group discussions	• Five focus group discussions with 28 single parents	April – May 2013
3. Follow-up interviews	• Semi-structured interviews with 9 single parents from focus groups • Observations of single parents using e-government channels	December 2013 – June 2014

The first author spent one week collecting data at UDK's family benefit call center. The purpose was to discover patterns and themes to be explored through in-depth studies. The focus group discussions were recorded on video and conducted using open-ended questions and exercises revolving around participants' history with the family benefits system, practices for interacting with UDK, and suggestions for improvement. Upon arrival the participants were briefed on the purpose of the project, that their statements would be presented in text form only, and that they would remain anonymous in any published studies (Krueger, 1994; Kvale, 1994).

A recruitment company was used to find single parent benefit recipients for the studies. They received a small gift for participating. We conducted focus groups discussions as this allowed us to simulate social processes and gain insight into how perceptions of UDK and G2C interaction are shared and shaped. This method can stimulate conversation around sensitive topics and allow researchers to ask follow-up questions (Colucci, 2007; Krueger, 1994). Moreover, they provided a means for skilled ICT-users to present their own explanations of their interaction with public authorities, and discuss the

underlying perceptions of both channels and public authorities, which informed their actions with other people in similar situations. Finally, they were a means to establish a rapport with our participants prior to the follow-up interviews. These interviews took place in the participants' own homes, which allowed us to study the context in which interaction with UDK occurred.

To aid our analysis of how e-government channels are domesticated in different ways we wanted the participants to vary in terms of their preferred means of interaction with public authorities. We selected participants to ensure, that participants who preferred to use e-government channels and those who preferred traditional channels were both included. To examine how citizen's experience with the service in question influence the domestication process and CC we included participants that had been single parents for a long time, and some that had only recently become single parents.

We created a personalized, semi-structured questionnaire for each participant (Kvale, 1994). After the interviews the participants were asked to solve a few tasks related to family benefits and the e-government channels. This offered insight into participants' knowledge and habits as regards G2C interactions. The interviews were recorded with an mp3 player. Immediately after each focus group discussion and interview the most important findings were documented. The material was transcribed and imported to Atlas.ti for analysis. The participants' statements were coded and analyzed according to domestication theory and the themes discovered in the call center. To guide our analysis during coding we developed a series of questions in a dialectal process between the theoretical framework and our empirical data (Friese, 2012).

5. Findings

This section presents the results of our analysis of single parents' actual use of e-government channels according to the aspects of the domestication process presented in figure 1.

5.1 The appropriation of e-government channels

To analyze the appropriation aspect we studied how the e-government channels were brought into the households, how single parents reacted to the channels becoming mandatory, and how they made the channels their own. Table 2 presents key findings related to the appropriation aspect.

Table 2. Key findings related to the appropriation of e-government channels

Aspect	Questions guiding analysis	Key findings
Appropriation	How are e-government channels introduced into households? What are the reactions to mandatory e-government?	• E-government channels are mandatory, but supplied by government for free. • Active resistance through non-use and negotiations with caseworkers, passive acceptance, adaptation.
	How do single parents' make e-government channels their own?	• Single parents cannot change the content of e-government channels, but they offer suggestions for improvement.

5.1.1 How are e-government channels introduced into households?

The introduction of the e-government channels into single parents' households differ from other technologies, as the content is provided for free and the channels are mandatory to use. Failure to use the e-government channels can result in economic sanctions as the single parent may lose certain economic benefits. To use these channels citizens need Internet access; all of our participants had such access at home. In 2013, 98 percent of Danish single parents had computer access and 97 percent had Internet access at home (Statistics Denmark, 2013).

5.1.2 What are the reactions to mandatory e-government?

Our participants are aware that they have to use e-government channels, especially borger.dk. Most also know that they are required to read their digital post. The responses to the mandatory services can roughly be grouped into three categories; active resistance, passive acceptance, and adaptation. According to domestication theory negotiations regarding the meaning and use of technologies take place in and around the household. We found that most of these negotiations take place with caseworkers. One participant actively resisted the mandatory requirement, and shared his strategy for doing so with the other participants during the focus group discussions:

Glen (M42) (Focus group 4): *"The [method] I have used during those hassles with something to fill out [online], I've kind of exploited, and acted a bit stupid in front of those at the municipality and said 'Can you please do this for me?'. (...) my computer has broken down."*

This is the only example of active resistance to the mandatory requirement we observed. Our participants are generally positive towards digitization and appreciate the increased convenience that it offers. However, they repeatedly criticized the quality of public authorities' online content. One participant relates the mandatory nature of e-government to a lack of choice regarding public authorities in general.

Maria (F41) (Focus group 3): *"I am forced to use the service. The public authorities do not seem to want to supply me with the information I need nor do they seem to want to make it attractive to use the services, as private companies do. But I am not able to choose. I have to live with them."*

This passive acceptance and perception that you 'just had to live with it' is reflected throughout the focus groups. The portal borger.dk is called 'boring' and 'uninviting'. Some participants said it was not a place where they 'spend their weekends'; they only use the website when they have to. We also found

what may be regarded as an externalization of ones' problems, by stating a concern for disadvantaged groups in relation to mandatory e-government. The concern for others was often expressed along with personal experiences and problems encountered. Most of these problems do not revolve around access to ICTs or digital skills, but a lack of knowledge of the benefit system and difficulties interacting with public authorities in general.

Lene (F41) (Focus group 1): *"I'm a university student, I work at a government agency and I was completely lost. I'm thinking, My Lord, the poor woman or man who has a ton of problems to begin with and isn't used to that website [borger.dk], I don't even dare to think of what they would do."*

5.1.3 How do single parents' make e-government channels their own?

The third strategy consists of attempts to adapt the e-government channels, or more frequently, offer suggestions for how increased personalization and automation could improve the services. They cannot make these changes themselves, as the authorities control the content. This limits the extent to which participants can appropriate e-government channels and make them their own. A general complaint about borger.dk is that the information presented is fixed and generic. Participants want information relevant to them as individuals according to their current needs, which are often grounded in changes to their life-situation. Further, many participants have had to transfer their data across public authorities, and suggest that this should be done automatically. They regard public authorities as one unit, and do not understand why they have to supply information, which is already known. This shows how the perception of public authorities can influence demands and needs for G2C interaction. The participants are generally unconcerned about privacy issues related to information sharing. This may be an indication of the high level of trust Danish citizens have in public institutions (Marozzi, 2014). We will return to the suggestions for improvement in the discussion section.

5.2 The objectification and incorporation of e-government channels

Objectification and incorporation covers the spatial, temporal and symbolic aspects of the domestication of a technology. We have mostly focused on the instrumental side of domestication, such as where and how single parents' interact with public authorities and which channels are used. We have found many examples of how our participants identify themselves as single parents, employed or unemployed, as self-reliant or not, or as skilled or novice ICT-users. Mastering e-government channels does not seem to be as important for making a claim about their competence. Moreover, the e-government channels are not displayed as status symbols. The interaction with public authorities is mostly carried out when one is alone and therefore not visible to others. However, during the focus group discussions the participants talked about their practices related to G2C interactions and revealed the underlying perceptions and cognitions informing these. We cover this in relation to the conversion aspect of domestication. Table 3 presents key findings related to objectification and incorporation.

Table 3. Key findings on the objectification and incorporation of e-government channels.

Aspect	Questions guiding analysis	Key findings
Objectification and incorporation	Where does the interaction with UDK occur? When does the interaction with UDK occur? Which channels do single parents use for interaction with UDK? How and why does channel interplay occur?	• Mostly at home in the evening due to documentation and complexity of task. • Strong patterns in single parents' interaction with UDK caused by system based events and life events. • Frequent use of third party channels; web-banking, search engines, and discussion forums. Only 40 percent of visits to borger.dk go through front page. • E-government and traditional channels are used simultaneously not just sequentially.

		Problems encountered online causes traffic on traditional channels
How are e-government channels incorporated into routines?	•	E-government channels connects to routines through third party channels.

5.2.1 Where does the interaction with UDK occur?

At the time of the study, UDK's services were accessible from traditional computers with Internet access. Most participants interact with UDK from their home, and often in the evening when children do not require attention. Although the primary channels for G2C interaction have been digitized, many supporting tasks that the citizens need to carry out still bind them to their household. We found several other factors, which led to the G2C interaction being carried out at home. Some participants were concerned about the social aspect; they did not want to be seen contacting public authorities while at work. Others lacked access to computers and personal information at work. Most participants keep financial information on their computer or in folders at home. Transactions through e-government channels and access to Digital Post require the use of NemID (EasyID), a paper card the size of a credit card. Many keep this card at home, which limits their access to e-government channels. Finally, the complexity of the tasks and the advanced form of data handling required cause many to conduct the tasks using computers with mouse and keyboard, and at night, in a quiet environment.

Lis (F42) (Focus group 1): *"You can do it nice and easy, figure it out by yourself, when you want to. (...) and you can do it at night. And you're not stressed out with work and kids, because I know when I have to do those things I need to concentrate, and I get mad if things happen around me, and if something goes wrong I get furious, so I need [my surroundings to be] quiet when I do this, and it is quiet at night."*

5.2.2 When does the interaction with UDK occur?

The participants' frequency of interacting with UDK or using borger.dk was generally low. However, at an aggregated level, we observe clear patterns in citizen-initiated contacts to UDK. We have identified two types of events, which cause interaction with UDK; events in the life of the single parent or their children or system events such as payments or the annual declaration single parents have to make to reaffirm that their circumstances have not changed. We have found similar patterns for other benefit areas; when UDK make payments or sends letters citizen-initiated traffic increases.

System events, which are the most frequent, require less knowledge of the benefit system, than life-events, which can change one's benefit eligibility. The event that caused most to call for help was becoming a single parent, typically following a divorce or the death of their partner. Participants often need to inquire about benefit eligibility, application procedures, and processing times. Infrequent interactions with public authorities mean that most participants do not develop these skills or retain knowledge about borger.dk or its self-service applications. They had difficulty navigating borger.dk, and finding relevant sections. Moreover, they were often eligible for benefits across several sections of UDK and other authorities. The participants therefore have to combine information distributed across borger.dk and third party websites. This silo structure was experienced the strongest by those that had become single after the mandatory e-government strategy was in effect and had to find online information on benefit eligibility by themselves.

Payment was mostly regarded as business as usual, and an invisible part of life unless any changes occurred. Borger.dk presents information regarding benefits such as rules, tariffs, payment dates etc. Most participants, however, get information of incoming payments from web banking statements,

which do not explain why a change has occurred. This lack of information in the channel associated

with payments is a frequent cause of frustration and calls.

5.2.3 Which channels do single parents use for interaction with UDK?

The participants knew they had to use borger.dk to look up information regarding family benefits, but

many also used search engines (mostly Google) to find information on third party websites. Some

participants said that information provided by other citizens is easier to understand than that provided

by public authorities, as it is written from a fellow citizen's point of view and not in a bureaucratic

jargon. Further, some websites provided answers to questions asked by other citizens in similar

situations. Participants also used their web-banking statement as a source of information regarding

payments. Two third party channels in particular, Google and Web-banking, were far more important

to the participants than borger.dk. They had domesticated these channels and incorporated them into

their routines for browsing the Internet and handling tasks related to their personal finances. In line

with previous domestication studies, we find that existing routines for online interaction have a

stronger impact on how e-government channels are used, than vice versa. The use of third party

channels means that single parents' path through the official websites can differ from the one

anticipated by public authorities. Web-statistics confirmed this finding; only 40 percent of those that

access borger.dk go through the front page. This can cause citizens to miss information, which is only

provided on the front page.

5.2.4 How and why does channel interplay occur?

The data collection in UDK's call center revealed that e-government and traditional channels often are

used simultaneously rather than sequentially. Many of the callers were logged on to borger.dk. Our

participants state that they often start an interaction online, but encounter problems or lack of feedback,

which makes them unable to complete a task or uncertain if the task is completed. This leads them to

add traditional channels to an ongoing online interaction; i.e. calling while remaining in front of their computers. The need for documentation often guided CC. It was especially important to the participants who were economically dependent on the benefits. Failure to supply information, or send a request for benefits within a given deadline could result in missed benefits for a given period. Some participants had developed their own method for documenting when a task was completed, by saving screenshots.

Laila (F45) (Focus group 5): *"I take a copy and put it into Word, and then I'll have it if there's a problem with the municipality, I can open it and say 'here' right?"*

Ditte (F51): *"Then the problem is if your computer suddenly breaks down, the hard drive, then it's all gone (laughs). I have tried that. So I'm hedging my bets. I have tried having the hard drive break down, and then there's nothing left."*

Laila: *"Then you just send it, put it into an e-mail and send it to yourself instead of putting it into a Word document."*

Although ICT-skills and use of other internet services, especially online banking, seems related to the willingness to use e-government services, there were many frequent callers with high ICT skills. Those that manage by themselves seem to trust public authorities, have a good understanding of the benefit system, and perhaps most importantly, express a high degree of self-efficacy and even stubbornness when dealing with public authorities. Those who did not have negative experiences with public authorities were not concerned about receipts. Some participants prefer turning up in person to hand in documents, because they had experienced letters being lost in the mail. Counter-turn up provides certainty that the documents are received, and an opportunity to ask if everything is in order. In the discussion section we offer recommendations for how these needs can be met.

5.2.5 How are e-government channels incorporated into existing routines?

Digital post was not mandatory at the time of the study, but it was possible to sign up for it and no

longer receive traditional letters. A few participants had incorporated digital post into existing routines,

through other media. They had signed up to be alerted of new digital post via e-mail or SMS, which

they used frequently. Others used a shortcut from their web-bank to e-Boks, which hosts digital post.

This saved them from logging in twice. When they completed their banking tasks they would proceed

to check for new digital post. This shows how seemingly small features can facilitate the incorporation

of new channels into existing routines. However, for such features to work, large organizations need to

cooperate on their implementation.

5.3 The conversion of e-government channels

The focus group discussions allowed us to study how our participants shared their ways of

domesticating e-government channels and the underlying perceptions, which informed their actions.

Table 4 presents key findings regarding the conversion of e-government channels.

Table 4. Conversion

Aspect	Questions guiding analysis	Key findings
Conversion	How do single parents share their domestication of e-government channels?	• Through off- and online conversations • By helping each other with G2C interaction. • Political views influence demand for self-service applications

5.3.1 How do single parents share their domestication of e-government channels?

We observed variation in our participants' domestication and view of e-government. Most participants

appreciate the increased convenience digitization offers, especially the ability to conduct transactions at

home and at night. Some have fully incorporated both the e-government channels and the idea of self-

service, and effectively become their own caseworkers. Others initiate an interaction by calling UDK.

We observed how they would share tips for making the interaction with public authorities smoother, such as how to get ahead in a phone line, how to create receipts, or how to negotiate with caseworkers.

Sometimes participants contested each other's statement on e-government channels. One mentioned how face-to-face contact was an effective channel to get a task solved, as caseworkers are forced to help those that show up in person. To another participant the benefit of face-to-face interaction was that caseworkers could provide emotional support during a personal crisis such as a divorce. This shows how a life-event can cause the need to contact a public authority, and influence the channel preferred for this interaction.

Lene (F41) (Focus group 1): *"They're forced to solve the problem when you show up in person.*

Tina (F42): But personal contact also provides empathy. It provides understanding, compassion, some 'You're going to be okay'. You don't get that from a damn computer, by ticking four boxes."

The perception and use of channels for G2C interaction was not a controversial issue. Whether public authorities should provide a complete overview of all benefits caused the most heated discussions.

Belinda (40) (FG3): *"Yeah, what are your options, right? Because right now you have to try all the different links, and if you haven't tried it before, you have no idea, what can I apply for?"*

INT: *"How did you get this information?"*

Belinda: *"When I became single it was at the municipality, but I had to walk around to all the various sections, and I thought, Jesus, this is really tiresome!"*

Maria (F41): [Interrupts] *"But what this is really about, part of borger.dk is basically a political question, which goes straight to the core of our welfare society. What kind of benefits are you entitled to? (...) Navigation is also about not just creating a smorgasbord, but have people apply according to their needs. (...) So maybe I don't need the benefits I am entitled to. So there are these ethical and political dilemmas in creating a website like borger.dk, right?"*

5.4   The Moral Economy of the Household

The moral economy of the household is not a separate aspect of domestication, but rather a set of underlying cognitions and evaluations, which affects the entire domestication process. We found that these underlying perceptions influenced not just the channels in a G2C interaction, but also informed the nature of the task itself. Table 5 presents key findings.

Table 5. The moral economy of the household

Aspect	Questions guiding analysis	Key findings
The moral economy of the household	How does single parents' view of UDK influence the interaction?	• Perception of benefit system influences channel choice as well as nature of interaction.

5.4.1 How do single parents' views of UDK influence the interaction?

Some of our participants who had the most experience with the benefit system start by contacting public authorities through traditional channels to get an overview of benefit eligibility and then proceeded with e-government channels. Their perceptions of the benefit system rather than poor digital skills influence their CC. One participant's awareness of her own limited knowledge of the benefit system guided her CC.

Linda (F39) (Focus group 2): *"I would walk down to the local municipality and say I'm single now, what can I get? I've heard I can get [counts with fingers]. (...) But that is because my experience tells*

me you only get what you ask for. And I don't know what to ask for; I don't know what I am eligible

for. (…) So I would turn up in person first and take notes, and then go home and use these digital

solutions."

Those that received few benefits, rarely interacted with public authorities, and primarily used e-government channels, tended to regard the benefit system as objective. They did not believe that their CC affected benefit eligibility or tariffs. Other participants said that they had to pull information on benefit eligibility from caseworkers, who wanted to save money. This required interaction through information rich channels. By showing up in person, they were able to resolve ambiguous issues, and interpret caseworkers' body language and intonation and use this non-verbal information as cues to know when to probe for more information.

Susan (F42) (Focus group 1): *"If you don't understand the answer you get, or you're still uncertain, if*

they [the caseworkers] sound uncertain, it is easier to probe. Directly when you have a (gestures eye

contact), both what am I supposed to do here, exactly, and have them point out, if you have doubts or

uncertainties, what exactly is it you need to know? What are your options? What can I get help for as a

newly single mother? Because they keep very quiet about that, if they can save money due to your

ignorance, right? (…) In that way personal communication is better, right?"

A similar view on the benefits of personal interaction came from a participant who was an early retirement pensioner and had frequent interactions with public authorities.

INT (Follow-up interview): *"But you're saying that there is a difference in the benefits you receive?"*

Linda (F39): *"Absolutely! (…) And I am certain that my personality and smile and kindness are*

important, and if I go to the counter and have a conversation with a caseworker (…). Of course it does.

I have a friend who's had a rough life. If he goes up there alone he will not get anything. But if I join him, he will get something. I'm positive that, not I, but the way I behave, matters."

In the call center, we were informed of how some citizens would repeatedly call in an attempt to get a better outcome. A participant's friend had successfully followed such a strategy.

Lene (F41) (Follow-up interview): *"I have a friend who is on sick leave, she tried calling, they'd forgotten to pay her money, she hung up because she got into an argument with the caseworker, calls up again to talk to another caseworker, and managed to solve the problem. My friend was aware of this [that there are different caseworkers who answer the telephones] (...) That is scary."*

6. Discussion

6.1 Contributions to CC studies in e-government

We began this study by asking how single parents actually use e-government channels. Previous e-government adoption and CC scholars have focused on explaining citizens' willingness to use individual channels, by isolating factors such as channel characteristics, and the nature of an initial problem. What happens after the point of adoption or CC has received little attention. Moreover, the focus has remained on the government's channels. By studying actual use of real services across channels, rather than the intention to use a single channel, we have made several findings, which contribute to CC literature in e-government. Table 7 presents the major findings of our study.

Table 7. Major findings

Topic	Results from previous studies	Contributions from study
Channels used in public service encounter	• Government owned	• Third party channels; search engines, web-banking, discussion forums

Use of multiple channels	• Sequential	• Simultaneous
Impact of trust	• Willingness to adopt e-government channels	• Perception of benefit system influences CC and the nature of an interaction
Cause of traditional channel use	• Difficult problems, lack of ICT access or skills	• Problems occurring during interaction, lack of feedback (i.e. receipts, status update)
Skills required for e-government use	• ICT skills	• Knowledge of benefit system and authorities
External factors influencing CC	• Government marketing	• Other citizens

Our application of domestication theory has sensitized us to studying the context in which G2C interaction occurs, and helps us to regard this interaction from the citizen point-of-view. This led us to study the entire service encounter across channels, including the use of third party channels. Inspired by MRT, CC studies have demonstrated how the nature of a pre-determined problem can influence CC. We found that many problems occur during an online interaction after the initial CC. To solve these problems people turn to the telephone while remaining online. Thus multi-channeling is not just sequential, but also simultaneous. Moreover, from a domestication theory perspective, what constitutes a problem and how to solve it varies based on one's perception of public authorities and the benefit system. Citizens who believe that the benefit system is subjective will look for channels, which allow them to negotiate with workers and thereby improve the likelihood of being granted benefits. This requires direct interaction with a caseworker, either face-to-face or through the telephone, you cannot negotiate with a computer. Our results indicate that trust in public authorities not only influences the channels used in a public service encounter, but also the nature of the interaction.

Studying G2C interaction as a process across channels also proved to be valuable. Many calls made to UDK concern simple request for receipts or status updates. When faced with a problem our participants often add channels to an existing interaction rather than switch channels. This shows that cross channel G2C interaction not only takes place sequentially, but also simultaneously. Although some problems exist prior to a G2C interaction, many occur during the interaction because the e-government channels do not meet single parents' needs. Not being able to find information or lacking feedback from an e-government channel were typical causes for calls. We found that our participants' knowledge and perception of the benefit system also guided their CC. ICT skills did not appear to be as important here. Finally, our studies indicate that there are external forces besides marketing which influence CC; citizens also influence each other, although this area requires further studies. Our findings show the benefit of studying actual use, and using qualitative methods, as it allows participants to present their own answers, which can lead the researchers into unknown areas. We cannot make statistical generalizations from qualitative studies, but now these areas can be studied further quantitatively.

5.2 Practical implications

How can domestication studies contribute to improving e-government services? Following Haddon (2007) we regard domestication theory as a lens which sensitizes us to study certain aspects of the way people use, or reject, a technology. We regard the alternate uses of e-government channels and the continued use of traditional channels as expressions of single parents' unmet needs and extensions of their habits for using ICT and for interacting with public authorities. E-government channels can be improved to fit citizens' actual needs through personalization and automation. The suggestions from our participants relate to UDK's presence on borger.dk:

- Remove generic information to improve navigation.

- Customize information to the citizen's life situation, benefits received, and status of cases.

- Provide an overview of benefit eligibility to the individual citizen, regardless of which public authority administers the benefits.

- Have data appear pre-entered into application forms.

Studying the incorporation aspect led us to findings on channel switching and addition. The findings suggest that the use of traditional channels can be reduced by improving the content and adding interactive features to the e-government channels, thereby providing instant feedback. Many calls to UDK are information requests concerning a completed online transaction. These information requests can be reduced by changing the way letters, forms, and webpages are written from the current bureaucratic perspective focusing on legal demands, to instead informing what the outcome are to the citizen, and especially what actions are required of them. Digital receipts can reduce calls by providing:

- Confirmation that data sent by the citizen has been received.

- Information stating if the task in question has been completed.

- Status of the case in question, especially estimated processing times.

Nevertheless, there will always be citizens who need traditional channels either because they do not have the necessary digital access or skills, or because they are in a unique situation, which cannot be anticipated and programmed into a web service.

E-government channels will be more useful if they are customized to citizens' routines related to G2C interaction. The connection to third-party channels such as search engines and web-banking can be improved by allowing web-content to be copied and used on third party websites, acknowledging that citizens do not necessarily follow fixed paths through the website, and presenting details on changes to

payments in web-banking statements. Support options should take the user context into account. Text or voice-based chat and co-browsing, where a caseworker participates in a citizen's online session, can help citizens complete tasks while remaining online thereby reducing calls. This support should be available in the evening to fit citizens' routines.

For citizens to fully utilize the e-government services they must appear meaningful and citizens must be able to make them their own. The demand for personalized and customized services and citizens' creative ways of getting around restrictions underlines this. Rather than regarding these actions as a by-product of adoption they are a vital part of the domestication process. If the channels do not meet citizens' needs, they will turn to traditional or third party channels, mandatory or not. As the authorities control the channels, citizens cannot make all the changes themselves. Ironically, the authorities have to make these changes for the citizens, to make them more self-reliant and increase their use of self-service applications. The suggested improvements can accommodate unmet needs and increase the use of the e-government channels and reduce the use of traditional channels. In this way, our study becomes part of a feedback loop between UDK and citizens, as shown in Figure 3.
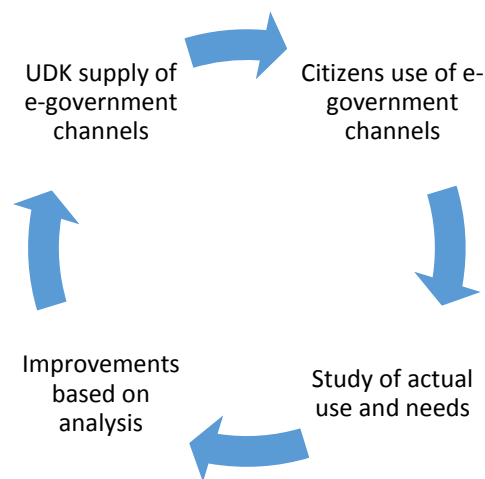
Figure 3. The feedback loop from domestication studies of e-government channels

This only works if citizens are granted freedom in how to use the channels, i.e. there is space in which the alternate uses of the channels can be conducted. The domestication process has to be analyzed, and the resulting recommendations have to be implemented. This entails that public authorities, who supply the e-government channels, are willing to update them. Thus, the supply of e-government can be regarded as a continuous process, as the channels for interaction and the content provided are changed to accommodate citizens' needs in addition to technical and political developments.

6.   Conclusion, limitations, and further work

In this paper, we have presented a mixed method analysis of citizens' domestication of mandatory e-government channels. The analysis was based on channel traffic to a public authority, followed by focus group discussions and individual interviews in participants' own homes.

We found that citizens' actual needs and behavior in a public service encounter can go beyond what is offered from one public authority's e-government channels. Therefore, citizens' way through a service encounter can take different paths and use other channels than those provided by a single authority. The problems that cause a change in channels often occur during an interaction, and may not be anticipated by the citizen, the public authority or researchers. As citizens' domesticate electronic services, they find inadequacies in the system and cracks to exploit. This can cause them to invent ways of working around limitations, for instance by creating their own receipts. By studying these processes, public authorities can learn how to improve their e-government services to better suit citizens' needs. In this way, citizens' actions become part of shaping and re-creating the technology. Such improvements may result in higher efficiency rates, improved satisfaction, and reduced use of traditional channels.

This study takes place in a particular setting; Denmark has the highest e-government adoption rates for citizens in the EU, and has made e-government channels mandatory. Danish single parents have high ICT skills and almost everyone has Internet access at home. The service also matters; the economic benefits are vital to many single parents and this impacts their need for reassurance and documentation. The conditions of our study may impact the use of our findings and recommendations in other settings.

Follow-up studies could be conducted on different population groups and policy areas to study how citizens' ICT skills and knowledge of the task at hand influence use of e-government channels, and their needs in a G2C interaction. Studies conducted in non-mandatory settings would allow for comparison and discussion of mandatory e-government. We conducted our study during a one-year period. Follow-up studies with the same participants could offer valuable insights into how e-government channels are domesticated over time. Finally, we have only briefly touched upon how citizens help each other when dealing with public authorities. Citizen-to-citizen interaction affects both uptake and use of e-government channels, and studying such interaction can highlight needs, which the e-government channels do not satisfy. Future studies should create more knowledge on this area.

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8. References

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