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The use of e-government services and the Internet: The role of socio-demographic, economic and geographical predictors

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ABSTRACT

This article explores the use of e-government services from the perspective of digital divides. First, it aims to find out which socio-demographic, economic and geographical factors predict the use of e-government services. Second, the article aims to show whether these factors moderate the way in which the time spent on the Internet is associated with the use of e-government services. The article is based on survey data ($N=612$) collected in Finland in May–June 2011 and is analysed by using a logistic regression modelling. Results show that gender and income moderate the link between the Internet and e-government service use. The more that women use the Internet, the more they use the government's electronic services. However, among men, the use of e-services does not increase similarly with the use of the Internet. Regarding income indicators, results imply that e-service use increases with Internet use but only among the respondents with low income levels. Additionally, the article shows that education, children, income and the size of the place of residence have major effects on the use of the government's e-services. Lastly, the empirical results are briefly discussed in relation to the digital divide discussion and some policy implications are presented.

1. Introduction

The future of the modern welfare state is subject to the successful digitisation of public services and administration. The term 'e-government' has been extensively applied to refer to the potential for information and communication technologies (ICTs) to help in network building and service delivery, and to increase the interactivity, transparency and efficiency of government (Yildiz, 2007). This potential is much needed in all industrialised countries, which have difficulties in providing a variety of public services (e.g., social benefits and tax counselling) in an economically suitable manner to their rapidly aging populations. In the face of these challenges, governments have been forced to close their offices and replace them with electronic service platforms. However, from the perspective of digital divide studies it remains unclear whether industrialised countries are able to combine a more balanced economy and socially equitable development of their respective information societies. The technocratic approaches to digital divides argue that social inequalities are temporary by nature and that time will level them out with the simultaneously increasing access to new ICTs. This approach is contrasted with three other perspectives. The social structure approaches see inequalities as structural and not conditional on technological development. The information structure and exclusion approaches acknowledge the connection between ICTs and growing social disparities. The modernisation and capitalism approach

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takes a step further by arguing that inequalities are highly structural and that ICTs are not only sustaining them but also creating completely new ones (Sassi, 2005, p. 694). It is against this backcloth that the article aims to produce empirical-based information about the predictors of e-government service use and to contribute to the digital divide studies from the perspective of government's electronic service use.

These aims form the basis for the following two research questions. First, the article seeks answers to the question: 'To what extent are socio-demographic, economic and geographical factors associated with e-government service use?'. Second, the article aims to find out: 'Do these factors moderate the way in which the time spent on the Internet is associated with the use of public e-services?'. The study is premised on survey data ($N=612$) collected in Finland in 2011. The data is analysed by using logistic regression analysis. As the survey contains only information collected from citizens, this study is not able to look at e-government services targeted at enterprises. The chosen perspective, where citizens' interaction with government is explored, is also known as a demand perspective. Many previous research projects have investigated the supply side by analysing the services that central and local governments provide over the Internet (Reddick, 2005).

The article begins with a literature review that is carried out to formulate the exact literature-based hypotheses for the study. Next, the research method, data and measurement instruments are described. After this, the findings of the study are reported one hypothesis at a time. Discussion and the limitations of the study are presented before the article ends with conclusions and policy implications.

2. Literature

2.1. Electronic government in Finland

Finland was one of the early-adopters of e-government. Its general atmosphere has been open to change, modernisation and technological innovations, as its citizens have been, on average, well-educated and technologically savvy (OECD, 2010). At the political level, investments in technological innovations have been considered as a way to sustain competitiveness in the economy. However, Finland has simultaneously suffered from the fragmentised and multilayered structure of its e-government, where a set of central-government, regional and municipal actors have built incompatible platforms for state–citizen interaction (National Audit Office of Finland, 2008; Turkki, 2009).

Nevertheless, recent statistics show that Finland is still among the top European information societies, although, other Nordic countries in particular rank higher than Finland regarding e-government use and services. In 2010, 58% of 16 to 74 year-old Finns had used the Internet in the last 3 months for interaction with public authorities[1] (60% men, 56% women), while in 2005 the same figure was 47% (no gender differences). The corresponding figure in 2010 for the EU25 was 33% (35% men, 31% women). It is also worth mentioning that the availability of e-government services[2] in Finland has increased between 2005 and 2010 from 69 to 95% (EuroStat, 2011).

In recent years, several policy measures have been made to boost the development of e-government infrastructure in Finland. In 2010, a new information society strategy was published and it was compiled to be in line with the national innovation strategy and the European Union's digital strategy (Ministry of Transport and Communications, 2010, p. 8; COM, 2010). These strategies underline, among many other things, interoperable e-services, not only within nation states but also across their borders. In Finland, the one-stop citizens' portal (suomi.fi) has recently been improved to provide a variety of services through one portal and personal e-service accounts are due to be launched later in 2011 (Ministry of Finance, 2010).

2.2. Socio-demographic, economic and geographical predictors

Differences in the exploitation of the Internet in general have been often studied through three theoretical frameworks. The Uses and Gratification Theory considers that the Internet is used to gratify certain needs. This psychological theory has been contested by the Social-cognitive Theory, which explains the existing media usage by habits and behavioural incentives: expected positive usage experiences contribute to the further exploitation of the media. The Technology Acceptance Model is based on the idea that the perceived usefulness and ease of use would determine people's attitudes toward technologies (e.g., LaRose, Lin, & Eastin, 2003; LaRose & Eastin, 2004; van Dijk, Peters, & Ebbers, 2008).

However, as the use of e-government services is perhaps not primarily guided by the principles of gratification, habit or usefulness, but a practical need to gain access to these services, the user's capability approach (Mante-Meijer & Klamer, 2005) appears more promising in this connection. People' skills and competences to use the Internet vary according to gender, age and education, while the place of residence, social position and family situation are linked to divergent service needs (e.g., Carter & Bélanger, 2005; Horst, Kuttschreuter, & Gutteling, 2007; van Dijk, Pieterson, van Deuren, & Ebbers, 2007; Colesca & Dobrica, 2008; Colesca, 2008; Carter, 2008).

[1] In EuroStat (2011) statistics, e-government is measured as a proportion of those who have used the Internet for one or more of the following activities: obtaining information from public authorities' web sites, downloading official forms, submitting completed forms.

[2] A proportion of 20 basic services which are fully available online (for more information see EuroStat (2011)).