



Comparing attitudes toward e-government of non-users versus users in a rural and urban municipality

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ABSTRACT

Many e-government and Information Systems (IS) adoption studies have focused on people's attitudes during the initial and post-adoption periods, but have not taken into account the fact that many people never use or experience e-government services. This paper investigates the attitudes of non-users versus users toward e-government services in two locales: one urban and one rural municipality in the Netherlands. Although rural and urban municipalities have distinct characteristics that may affect people's attitudes toward e-government, the research thus far has not differentiated between them. We propose a model to investigate these differences using factors based on various IS acceptance and resistance theories, including enabling factors (e.g., perceived behavioral control), inhibiting factors (e.g., perceived risk) and other factors (e.g., trust and geographical closeness). The model was tested via a survey of 337 non-users and users of e-government services from one rural and one urban municipality in the Netherlands. The findings reveal intriguing similarities and differences among the four groups, contributing a more nuanced perspective to the e-government and IS literature.

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1. Introduction

Electronic government, commonly known as e-government, refers to the utilization of information and communications technologies, including web-based technologies, to improve the efficiency and effectiveness of service delivery and transactions in the public sector (Teo, Srivastava, & Jiang, 2009). The European Action Program on e-government for 2011 to 2015 has the goal of 60% of European Union citizens using e-government services by 2015. This kind of action program has led governments to put effort and financial investment into developing and advocating for the use of e-government services (Overheidsmonitor, 2011). Governments have been able to convert many paper-based services into e-services (Anthopoulos, Siozos, & Tsoukalas, 2007; Gouscos, Kalikakis, Legal, & Papadopoloulou, 2007). However, they have not been so successful in making their citizens adopt or continuously use those e-services, especially at a local (municipality) level. For example, the average rate of use of e-government services provided by municipalities is 24% in the Netherlands (Van Dijk, Peters & Ebbens, 2008). Further, the usage rate of e-government services varies by municipality.

In this paper, e-government services refer to electronic services provided by a municipality website, whether the services are related to a central government (e.g., applying for a passport) or to a local

(municipality) government (e.g., applying and regularly renewing a parking permit). Some services (e.g., changing a residential address) are used regularly, while others are more sporadic (e.g., renewing a parking permit, paying parking fines, periodically borrowing sports facilities). Thus, "continuous use" refers to the usage of e-service whenever a citizen needs to deal with this kind of government service. This means that citizens do not need to visit their city halls if they use the services online. This phenomenon reveals issues. One is related to low adoption and usage rates by citizens. The other is about different adoption and usage rates between municipalities.

This research investigates the attitudes of non-users versus users toward e-government services by comparing two samples from two distinct municipalities (rural versus urban area in the Netherlands). Each municipality has different characteristics such as geographical size, population, population density and average age of population. Differences can be more visible between a rural versus an urban area (Hofferth & Iceland, 1998). As "rural communities have unique technological needs," people in urban and rural areas have different attitudes toward technologies (Gilbert, Karahalios, & Sandvig, 2010: p. 1367). For example, e-government services can be much more useful for residents who live far away from their city halls in a rural area. For this reason, we selected two distinct samples — one from an urban municipality and the other from a rural municipality.

Although some studies focusing on users' experiences of e-government systems have contributed to the development of e-government literature (e.g., Wang & Liao, 2008; Teo et al., 2009), there is little research that investigates the driving factors leading non-users

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to initially adopt e-government services. This is important, considering that many citizens have not ever experienced e-government services offered by a local government in many European medium and small sized regions. For example, one municipality in The Netherlands reported that only four percent of its citizens had ever experienced and used its e-government services (Van Dijk et al., 2008). An important reason to study non-users in the context of e-government services is the case when mandatory services are provided by a monopoly supplier. In the context of commercial services, people usually have an option to select from various service providers or to not to use the service at all. In the context of government services, citizens must either go to their city halls or utilize e-government services, and they might not have a choice about whether or not to use the service: for instance, paying a parking fine is mandatory, while buying a book is not. This paper therefore investigates non-users' behavioral attitudes toward e-government, comparing to those of users.

To compare the behavioral attitudes toward e-government services of non-users versus users in these two locales, we have developed a model that includes enabling factors (perceived behavioral control, perceived usefulness, perceived ease of use and subjective norm); inhibiting factors (perceived risk, resistance to change); trust as an antecedent of perceived risk; and an environmental factor (geographical closeness between citizen's house and her/his city hall).

This paper contributes to extant literature in various ways. First, it finds a clear distinction between non-users' and users' perceptions. Second, this research identifies an intriguing relationship between subjective norm and resistance to change, by including inhibiting factors (resistance to change and perceived risk). Third, this paper provides a model for studying people's attitudes toward e-government services. Fourth, this paper compares findings across municipalities and presents new insights in the perceptions of citizens from two different municipalities. Therefore, practitioners can use the findings of this research to increase citizens' initial adoption and usage rates of e-government services.

The paper is organized as follows: first, the theoretical background and hypotheses are presented. The research method is presented next, followed by a section on results. In the discussion section, the results are discussed in depth. The conclusions are then presented.

2. Theoretical background and hypotheses

One stream of e-government research has focused on identifying motives that result in acceptance and intention to use e-government services (e.g., Carter & Bélanger, 2005; Chang, Li, Hung, & Hwang, 2005; Hung, Chang, & Yu, 2006; Yaghoubi, Kord, & Shakeri, 2010). However, there have been few empirical studies that distinguish between people's initial adoption and post-adoption attitudes toward Information Systems (IS). Although the research of Karahanna, Straub, and Chervany (1999) opens new avenues in this area, initial adoption and the lagging acceptance behavior of non-users have not been explicitly investigated much.

There are differences in the perceptions of non-users and users toward IS (Karahanna et al., 1999; Ramayah, Ma'ruf, Jantan, & Mohamad, 2002). In this study, users are defined as citizens who have used e-government services and are continuously using them. Non-users are people who have not adopted e-government services, or have only used them once or a few times but cannot recall their experiences and do not plan to use at the moment. It is expected that there will be fundamental differences between the perceptions and key motives of non-users and users, since non-users have to rely on *expectations* and users can rely on past *experiences*. Expectations are not always formed through deliberation, but may be developed based on imagination and experience with alternative technology. Hence, non-users' and users' judgments and perceptions may differ greatly from each other.

Identifying potential factors from literature and applying them to understand both non-users' and users' decisions to initially adopt or

continuously use e-government services are important. We can therefore distinguish what factors differ for non-users to adopt and for users to continuously use e-government services, because factors that significantly affect initial adoption can possibly play no role in continued usage (Karahanna et al., 1999).

To develop a model that identifies antecedents of intention to adopt and continuously use e-government services for non-users and users respectively, we address not only basic behavioral attitudes and subjective norm but also perceived behavioral control (Ajzen, 1988). Due to the fact that "successful performance of the intended behavior is contingent on the person's control over the many factors that may prevent it" (Ajzen, 1988: p. 132), perceived behavioral control can play a significant role in a person's decision to adopt or continuously use e-government services. Furthermore, we introduce perceived necessary knowledge as a determinant of perceived behavioral control, because people who have experienced general e-commerce may believe that they have the necessary knowledge to use e-government service, even though they have not experienced any e-government service. Perceived ease of use (Riemenschneider, Harrison, & Mykytyn, 2003) and facilitating conditions are also used as determinants of perceived behavioral control. The relationships between these factors will be explained in detail in the following section.

In addition, as researchers (e.g., Bhattacharjee & Hikmet, 2007; Seo, Boonstra, & van Offenbeek, 2011) have urged, factors that inhibit people to accept and adopt IS are included in this model. Trust is a significant factor affecting other factors in IS adoption (Teo et al., 2009). Motivation psychology assumes that motives only exert an influence on behavior if they are roused by incentives (Schüler, 2010). Hence, motivation lies within the person and is shaped by incentives that reflect the environment. Incentives are defined as situational cues in the environment potentially associated with desired goal states. They therefore stimulate goal-directed behavior (McClelland, 1985; Schneider & Schmalz, 2000; Beckmann & Heckhausen, 2008; Schüler, 2010). Motives can be stimulated intrinsically and extrinsically. In the case of the latter, strengthening incentives for (non)users could possibly increase a person's intention to adopt or use e-government services. Thus, geographical distance between a citizen's house and her/his city hall is considered to play a role as an incentive in developing her/his intention to initially adopt or continuously use e-government services (Van Deursen, van Dijk, & Ebbers, 2006). These factors will be explained in detail and hypothesized in the section below.

2.1. Hypotheses

Perceived usefulness and perceived ease of use are important factors in accepting information systems (Davis, 1989). Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" and perceived ease of use is defined as "the degree to which using the technology will be free of effort" (Davis, 1989). The constructs of perceived usefulness and perceived ease of use are directly correlated with intention to adopt or use (Gefen, Karahanna, & Straub, 2003; Straub, Keil, & Brenner, 1997). In the e-government context, citizens who perceive usefulness of e-services provided by their municipality tend to initially adopt or continuously use them, leading to the first hypothesis:

H₁. A citizen's perceived usefulness of e-government services has a positive relationship with her/his intention to initially adopt or continuously use.

Geographical distance might motivate citizens to use e-government services (Van Deursen et al., 2006). It seems logical that an individual who has to travel a few kilometers to her/his city hall would increase his/her perceived usefulness of e-government services. Incentive is identified as a major situational cue to motivate one's behavioral intent and is acknowledged in the theory of motivation psychology

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