Attitudinal Determinants of E-Government Technology Use Among U.S. Local Public Managers

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Abstract

Despite widespread adoption of e-government technology, little is known about how public managers utilize this technology and what affects their technology use. Since new technology is often accompanied with organizational changes, resistance to new technology is expected to occur. If so, what encourages public managers to use e-government technology?

In an original effort to bridge the literature on technology acceptance and the literature on public service commitment, this paper proposes an integrated model of public managers’ e-government technology use. Using data from a national survey of public managers in U.S. local governments in 2010, this paper has found that, in addition to public managers’ perceptions of technology, their attitudes toward public service affect their website use.

1. Introduction

Although almost ninety five percent of local governments in the U.S. have already established their website [1], little is known about the degree of actual website utilization by public managers in governments. As new technology requires changes in work environments, resistance to changes is expected to occur [2, 3]. Indeed, e-government scholars have been concerned about potential under-utilization of e-government technology [4, 5]. Studies on local e-governments [6-8], however, have not addressed the potential gap between technology introduction and its actual utilization. This paper is inspired by this potential gap between organizational adoption and individual use. It investigates what attitudinal factors drive public managers to use e-government technology.

Several studies have attempted to examine individual acceptance and use of technology within formal organizations and work environments; they are a series of technology acceptance models [9-12], motivation models [13, 14], theory of planned behavior [15], and risk and trust models [16, 17]. These models provide multiple dimensions of individual attitudes toward technology as determinants of actual adoption and use. Nonetheless, most do not consider the influence of work attitudes endemic to the public service sector.

Since public service work embraces intrinsic work motivations, such as commitment to public interest or civic duty [18, 19], I hypothesize that public service commitment influences managers’ propensity to use organizational technology for their public service work. In doing so, I develop a conceptual model based on the literature on attitudes toward public service work [20-22] and the literature on attitudes toward technology [9, 15, 23, 24]. Using data from a 2010 national survey of public managers in U.S. local governments, then, this paper tests the effects of individual attitudes toward work and technology. This analysis reinforces a suggestion that public management studies be fruitfully integrated with e-government studies [25], for a context-specific theorization of public managers’ technology use.

This paper will advance our understanding on individual behaviors related to e-government technology by highlighting the effects of work attitudes. Attention to the public managers’ daily work processes will enrich a “process-centric” perspective [26], by showing that e-government is not just a one-time change in technical systems but an on-going socio-technological process involving organizational members’ daily practices. Moreover, this paper will facilitate interdisciplinary endeavors to develop context-specific models of e-government technology use.

The rest of this paper comprises four sections. Section 2 reviews two bodies of literature: one on technology acceptance and the other on work commitment, especially public service commitment. At the end of Section 2, my integrated theoretical model is presented. Section 3 describes details of data and method, which is followed by findings in Section 4. Section 5 discusses implications of these findings.
2. Attitudinal Determinants of E-Government Technology Use

Generally, e-government refers to government’s use of information and communication technologies (ICT) to deliver information and services to citizens through the internet [4]. By definition, e-government connotes technology adoption and its use at once. In reality, however, there is a gap between technology adoption at the organizational level and its actual utilization at the individual level (or, a “decoupling” in neo-institutionalist terms). When a government establishes its website, public managers may still shun from using the technology in place. Additionally, it can be influenced by organizational and social conditions [10, 24]. To account for these factors, the socio-technological approach examines technology adoption and use in technological, organizational and environmental contexts [32]. In this perspective, e-government technology use is not simply understood as the choice of e-technology, but complicate responses to both e-technology and “government” [25]. Public managers’ technology use is to be explained not only by perceptions of technology but also attitudes toward public service work in government.

(1) Attitudes toward Technology

Individual technology adoption and use have been intensively studied in the field of information system [9-11, 13, 14, 33]; several scholars have devotedly developed comprehensive models [10, 34, 35]. In these studies, individuals’ attitudes toward technology are main factors predicting their use of technology. Especially, individuals’ perceptions of usefulness and ease of use regarding technology remain relatively valid to predict their use pattern [33, 36]. A recent meta-analysis of technology acceptance models [36] concludes that the original constructs – perceived usefulness and perceived ease of use – are still effective to predict the intention to use technology, although additional antecedents and moderators have been proposed.

Perceived usefulness is commonly defined as “the degree to which a person believes that using a technology would enhance one’s job performance” [9]. It is aligned with the concept of relative advantage in the innovation diffusion model [23], since both concepts consider critical individual expectations on economic and social returns from the technology. In general, perceived usefulness is considered to be positively related to the intention to use and actual use of the technology [36]. That is, the more benefits people perceive from the given technology, the more eagerly they adopt and use the technology.

Perceived ease of use refers to “the degree to which a person believes that using a technology would be free of effort” [9]. This insight on the ease of use is also found in the innovation diffusion model [37], although Rogers [23] articulates it as comprehensibility and compatibility of technology. Perceived usefulness is commonly found to promote individuals’ technology adoption and use [36]. The less costs are expected for technology adoption or use, the more easily people feel that they can adopt or use the technology.

In the context of e-government technology use, little is known about the effects on technology use of
public managers’ perceptions of technology, although recent studies on citizens’ government website use show that citizens’ perceptions of technology predict their use of government website. Phang et al. [38] report that perceived usefulness of website is the most significant predictor of senior citizens’ intention to use. Carter and Belanger [16] show that perceived ease of use affects citizens’ intention to use the government website. Applying these logics to the side of public service providers, this paper hypothesizes that public managers’ perceived usefulness and perceived ease of use will positively influence their website use.

**Hypothesis 1**: Public managers’ perceived usefulness of e-government technology will be positively associated with their actual use of the technology.

**Hypothesis 2**: Public managers’ perceived ease of use of e-government technology will be positively associated with their actual use of the technology.

The quality of e-government technology is another factor. High quality e-government systems are generally expected to deliver information and services in a more efficient and accountable manner. Higher expectation on the benefits and convenience can entice individuals to adopt and use the systems. In fact, Delone and McLean [39] show that high quality information systems make users more satisfied, which eventually help them continue to use the systems. Moreover, a high quality website is found to increase citizens’ continuous use of the website [27]. Likewise, this paper hypothesizes that public managers’ perceived quality of city website will positively influence their use of the website.

**Hypothesis 3**: Public managers’ perceived quality of e-government technology will be positively associated with their use of the technology.

(2) **Attitudes Toward Work: Public Service Commitment**

Interestingly, individual attitudes toward work have rarely been studied in existing technology acceptance models. Although several revised models [10, 34, 35] incorporate intrinsic motivations or institutional contexts through which individuals come to – or not to – use technology, particular work contexts and attitudes to these contexts, especially the context of public service sector, are not reflected in these models yet.

Since public managers are organizational members, their perceptions and behaviors are constrained and reinforced by their organizational roles and work conditions. Early scholars, such as Simon [40] and Weber [41], show that individual decisions and behaviors are shaped by organizational rationality. Despite changes in the nature of organization-members relationship over decades [42], organizational roles and work commitment remain significant for explaining individual behaviors within organizations [22, 43].

In an interesting extension of organizational rationality, contemporary public management studies focus on public service commitment in explaining individual behaviors in public organizations. Public service commitment is a kind of other-regarding attitudes grounded in the public service sector [18]. Although this work commitment is not necessarily limited to public organizations, Perry and Wise [44] stresses that it is “an individual’s predisposition to respond to motives grounded primarily or uniquely in public institutions or organizations”.

Public service commitment is regarded to have multiple dimensions [18]; it can be an individual desire to serve the public. It can be a desire to play a role in public policy making processes. Individual willingness to help others can be another motif for public services. Perry [45] reviews these multiple dimensions of public service motivation and condenses them largely into four categories: 1) commitment to public interest and civic duty, 2) the attraction to public policy making, 3) compassion to others, and 4) self-sacrifice. This paper examines one of these four subcomponents, that is, commitment to public interest and civic duty.

This public service commitment can lead to more proactive and enthusiastic work attitudes [19]. It may motivate public managers to adopt and use new e-government technology despite technical or non-technical disadvantages. In a study using the 1996 Merit Principles Survey [46], public service commitment was reported to have a strong positive effect on job performance and satisfaction. Another recent study [47] also reports that individual commitment to public service positively influences work performance. The relationship between public service commitment and technology use has not been empirically examined yet. Building on these previous findings, I hypothesize that public service commitment facilitates managers’ use of e-government technology in public organizations.

**Hypothesis 4**: Public managers’ commitment to public service will be positively associated with their use of e-government technology.

To summarize my theoretical model (Figure 1), I hypothesize that public managers’ use of e-government
technology can be influenced by two sets of their attributes: 1) attributes as technology users and 2) attributes as public service providers.

As technology users, public managers are supposed to use e-government technology when they perceive it as useful, easy to use, or high quality. More important, public managers may be eager to use e-government technology when they are more committed to their work, or public service.

![Figure 1. A Conceptual Model](image)

### 3. Data and Methods

The data are collected from the web survey on e-government technology and civic engagement conducted by the Science, Technology and Environmental Policy Lab at the University of Illinois at Chicago with a financial support from the Institute for Policy and Civic Engagement. The survey sample includes U.S. city government officers in 500 localities with populations ranging from 25,000 to 250,000. Because larger cities often have greater financial and technical capacity for e-government, all 184 cities with a population over 100,000 were selected while 316 out of 1,002 communities were proportionally drawn for smaller cities with a population under 100,000. For each city, five chief officers were selected from five departments. These five departments included the city manager office, the community development department, the finance department, the park and recreation department and the police department, since these five departments were the most common subdivisions found across U.S. local governments.

In total, 2,500 city officers were invited to take part in the survey. The survey started on August 2nd in 2010 and closed on October 4th in 2010. A total of 902 responses were received with the final response rate being 37.9%. Of the total responses, the analyses of this paper used 873 responses which reported that they have department websites. Respondents who did not have a departmental website or did not report the presence of a departmental website were excluded. Given the disproportional sampling strategies, sampling weights based on the city sizes were developed and applied to the analyses in order to produce nationally representative estimates. The unit of analysis in this paper is public managers, chief officers from the five departments in US local governments.

#### (1) Dependent Variable

The dependent variable is public managers’ use of city website. In this paper, the use of e-government technology is operationalized by the degree to which public managers utilize their city and department websites, since the government website is one of the most commonly used e-government interfaces between public managers and citizens [1, 27]. However, given a broader range of e-government technology, city website can be only a subset of information and communication technology utilized for online services. Moreover, in this paper, the use of website mainly refers to information-seeking behaviors when public managers respond to citizens’ requests. Given data limitations, other online services on website, such as electronic transaction, online procurement, or online two-way communication, are not examined in this paper.

In the survey, respondents were asked to indicate the level of agreement with the following statements: “I regularly direct residents to the city’s website” and “When I am responding to a citizen’s phone call, I use the city website to get information”. For each statement, five response items were given; they are “strongly agree”, “agree”, “neither agree nor disagree”, “disagree”, and “strongly disagree”. Those who strongly agreed with the statement were assigned a value of 5, while those who strongly disagreed were assigned a value of 1. Based on managers’ responses in these two questions, an index variable, an interval variable, was constructed (α=0.70). I use ordinary least square (OLS) regression models.

#### (2) Independent Variables

Attitudes toward technology are examined by three constructs, such as perceived usefulness, perceived ease of use, and perceived quality of website. Perceived usefulness was measured by survey responses to the question, “to what extent information and communication technology improves efficiency
and lowers costs of the department?” Perceived ease of use was measured by survey response on how easy it is to navigate city website. Both of them were assigned five-level Likert scale of agreement. Those who strongly agreed with the statement were assigned the value of 5, while those who strongly disagreed were assigned 1.

Perceived website quality was measured as a linear combination of seven survey responses ($\alpha=0.85$); they were about the excellence of each of the following aspects: 1) provision of employee contact information, 2) provision of department documents of interest to citizens and other external stakeholders, 3) opportunities for citizens and other external stakeholders to ask questions online, 4) information about what our department does, 5) information about the decisions our department makes, 6) clarity of information assessing or analyzing activities our department is responsible for, and 7) information about department meetings, including agendas, minutes and other postings. The five-level Likert scale of excellence was provided for each item: “excellent” (5), “very good” (4), “good” (3), “fair” (2), and “poor” (1). These seven items were reduced into one index variable, and used as the measure of perceived website quality.

Second, commitment to public service was measured as a linear combination of seven items ($\alpha=0.83$). Ten items about public service motivation were asked in the survey. They were originally from Perry’s [45] measures of civic duty and commitment to public interest. Out of these ten, seven items were found to be reliable in the factor analysis with varimax rotation. These final seven items are 1) “I consider public service my civic duty”, 2) “I unselfishly contribute to my community”, 3) “I am willing to go to great lengths to fulfill my obligations to my country”, 4) “I believe everyone has a moral commitment to civic affairs no matter how busy they are”, 5) “It is my responsibility to help solve problems arising from interdependencies among people”, 6) “Meaningful public service is very important to me”, and 7) “Public service is one of the highest forms of citizenship”. Those who strongly agreed with each statement were given 5, while those who strongly disagreed were given 1. These seven items were reduced into one index variable about public service commitment.

(3) Control Variables

Technical systems are one of the major facilitating conditions of technology adoption and use [8, 12, 15, 31]. When an organization is equipped with technical systems compatible to the new technology, organizational members are found to be more likely to adopt and use the technology. Hence, online information systems compatible with city website are controlled for. Three proxy variables are used to gauge the degree of online system development: the percentage of Internet users in the department, the number of online services provided by the department, and the presence of Intranet.

The percentage of Internet users was measured by the survey responses on the percentage of Internet users within the department. The number of online services was also measured by the survey responses. In total, four online services were listed as sub-items: “online payment for services including fees and fines”, “online delivery of local government records or department information to citizens who request information”, “online request for services that your department is responsible for delivering”, and “online completion and submission of job applications”. The total number of sub-items checked in the survey was regarded as the number of online services provided by the department. The presence of Intranet was measured by the binary responses on the presence of an Intranet within a local government or department.

Secondly, technical support is another factor that promotes organizational members to use e-government technology [48]. Technical support was measured by the survey responses on the presence of IT department and internal IT staffs. In the survey, public managers were asked, “Who is responsible for maintaining and improving your department website and e-government services? (select all that apply)”. Those who checked “a separate information technology department” were assigned 1 in the variable of IT department, while others were given 0. In the same question, those who checked “a designated person in our department” were assigned 1 in the variable of IT staff, while others were assigned 0.

Thirdly, organizational size and departmental characteristics are controlled for. Since organizational size was commonly found to be associated with technology adoption and use [6, 49], it was included as a control variable. Organizational size was measured by the number of full time employees. The measure of organizational size was logged since its distribution in the sample had a long tail. Moreover, departmental characteristics are also controlled for since the demands and conditions for website use can differ across departments due to different tasks. Since all respondents were sampled from five departments of US local governments, four department dummy variables were included in the model. The major office was used as a reference group.

Lastly, individual characteristics were included as control variables. First, demographic variables, such as age, gender, and race, were included because these
demographic characteristics are found to be related to the familiarity with Internet use, Internet literacy, and actual use of internet [31, 50, 51]. Female respondents were assigned 1, whereas male respondents were assigned 0. Whites were assigned 1, whereas others were assigned 0. Age was measured by subtracting the year of birth from 2010. In addition, the length of city employment is added as a control variable since it is reported to be associated with work commitment [52], and innovative technology adoption [21]. It was measured by the responses to the question, “About how many years have you worked for the city?”

4. Findings

Public managers in U.S. local governments are found to fairly regularly use their city website for day-to-day business with citizens. More than sixty percent of respondents agree or strongly agree that they use city websites to get information when they respond to citizen phone calls. Almost eighty percent of respondents agreed that they regularly direct residents to the city’s website.

Table 1. Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website use</td>
<td>857</td>
<td>3.8</td>
<td>0.8</td>
<td>1.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Perceived usefulness</td>
<td>854</td>
<td>3.2</td>
<td>1.1</td>
<td>1.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Perceived ease of use</td>
<td>857</td>
<td>3.6</td>
<td>0.9</td>
<td>1.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Perceived website quality</td>
<td>852</td>
<td>3.2</td>
<td>0.8</td>
<td>1.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Public service motivation</td>
<td>822</td>
<td>3.9</td>
<td>0.5</td>
<td>2.5</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Org technology

| Internet user %               | 819 | 72.4 | 30.2 | 0.0 | 100 |
| Online services               | 848 | 2.3  | 1.3  | 0.0 | 4.0 |
| Intranet                      | 810 | 0.9  | 0.4  | 0.0 | 1.0 |

Technical support

| IT department                 | 873 | 0.5  | 0.4  | 0.0 | 1.0 |
| IT staff                      | 873 | 0.5  | 0.4  | 0.0 | 1.0 |

Org size (logged)

| Mayor office                  | 873 | 0.2  | 0.4  | 0.0 | 1.0 |
| Community development         | 873 | 0.2  | 0.4  | 0.0 | 1.0 |
| Finance                       | 873 | 0.2  | 0.4  | 0.0 | 1.0 |
| Park and recreation            | 873 | 0.2  | 0.4  | 0.0 | 1.0 |
| Police                        | 873 | 0.2  | 0.4  | 0.0 | 1.0 |

Departmental controls

| Female                        | 820 | 0.2  | 0.4  | 0.0 | 1.0 |
| White                         | 840 | 0.8  | 0.3  | 0.0 | 1.0 |
| Age                           | 778 | 51.1 | 8.3  | 25.0| 75.0|
| Years worked                  | 822 | 14.2 | 16.6 | 0.0 | 44.0|

Still, the level or frequency of the use varies among public managers. And almost a quarter of public managers are found to be marginal users or non-users of city website. Then, what makes the difference in the use pattern? Why do some public managers use their website more than others? Do individual attitudes matter?

First, public managers’ attitudes toward e-government technology are found to influence their website use. As seen in Table 2 (Model 1), perceived usefulness and perceived ease of use have positive and significant effects on the use of website. The perceived quality of website is found to be a positive factor as well. These findings are not divergent from previous researches on public website users that report positive effects of individual perceptions of technology on the actual use of the technology [9, 16, 27, 33, 39]. When public managers consider their website more useful, easier to use, and superior in terms of information quality and functions, they use the website more often.

Even in my integrated model (Model 2), individual perceptions of technology are found to be significant. In other words, the effects of perceived usefulness on technology use remains robust, when other conditions are held constant. So do perceived ease of use and the dominant effect of website quality.

Secondly, public managers’ work attitudes are found to influence the use of website. Model 2 in Table 2 shows that public managers’ commitment to public service positively influences website use. In other words, public managers who are more committed to public service show higher degrees of website use. The positive effects of public service commitment remain robust even when other factors are held constant. The impact of public service commitment on website use remains substantial. One unit increase in managers’ public service commitment brings about a 24% increase in their website use, as shown in Model 2 in Table 2. That is, managers’ public service commitment generates a substantial difference in website use even when managers see the same advantages or costs from the website. For instance, even when two managers similarly consider their websites as not qualified, the manager who is the more committed to public service shows the higher degree of website use than the other.

In both Model 1 and Model 2, organizational and individual control variables are included since they are regarded to affect the use of website. As reported in previous studies [8, 12, 48], advanced technical systems and supports are found to be positively related to website use. Especially, the presence of IT department is found to significantly contribute to managers’ website use. The degree of online services offered to citizens is also found to be a significant factor. On the contrary, managers’ age is found to be negatively
related to the use of website. This is consistent with the findings [50, 51] that older people show a lower degree of website use.

Public managers’ website use appears to vary across departments. Compared to the managers who are working in the major office, managers who are working in the community development are more likely to use city website when they respond to citizens. This may indicate the effects on managers’ website use of different tasks between two departments. For instance, these two departments may differ in terms of the degree of interaction with citizens, which eventually affect the use of website as a tool to respond to citizens. The differences between the major office and the other departments, such as finance, park and recreation, and police departments, were marginal and statistically insignificant.

### Table 2. OLS Regression Models

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived usefulness</td>
<td>0.10 (0.03) ***</td>
</tr>
<tr>
<td>Perceived ease of use</td>
<td>0.15 (0.03) ***</td>
</tr>
<tr>
<td>Perceived website quality</td>
<td>0.23 (0.04) ***</td>
</tr>
<tr>
<td>Public service motivation</td>
<td>0.24 (0.05) ***</td>
</tr>
<tr>
<td>Org technology</td>
<td></td>
</tr>
<tr>
<td>Internet user %</td>
<td>0.00 (0.00)</td>
</tr>
<tr>
<td>Online services</td>
<td>0.06 (0.02) *</td>
</tr>
<tr>
<td>Intranet</td>
<td>0.13 (0.08)</td>
</tr>
<tr>
<td>Technical support</td>
<td></td>
</tr>
<tr>
<td>IT department</td>
<td>0.21 (0.07) **</td>
</tr>
<tr>
<td>IT staff</td>
<td>0.03 (0.07)</td>
</tr>
<tr>
<td>Org size (logged)</td>
<td>-0.03 (0.02)</td>
</tr>
<tr>
<td>Departmental controls</td>
<td></td>
</tr>
<tr>
<td>Mayor office</td>
<td>*</td>
</tr>
<tr>
<td>Community developmnt</td>
<td>0.26 (0.10) **</td>
</tr>
<tr>
<td>Finance</td>
<td>0.00 (0.10)</td>
</tr>
<tr>
<td>Park and recreation</td>
<td>0.13 (0.10)</td>
</tr>
<tr>
<td>Police</td>
<td>-0.17 (0.10)</td>
</tr>
<tr>
<td>Individual controls</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>-0.02 (0.07)</td>
</tr>
<tr>
<td>White</td>
<td>0.10 (0.10)</td>
</tr>
<tr>
<td>Age</td>
<td>0.01 (0.00) ***</td>
</tr>
<tr>
<td>Years worked</td>
<td>-0.00 (0.00)</td>
</tr>
<tr>
<td>Intercept</td>
<td>2.56 (0.28) ***</td>
</tr>
<tr>
<td>N</td>
<td>660</td>
</tr>
<tr>
<td>prob&gt; F</td>
<td>0.000</td>
</tr>
<tr>
<td>R²</td>
<td>0.265</td>
</tr>
</tbody>
</table>

Note: coefficients (standard errors) are reported

***P<0.001; **P<0.01; *P<0.05

The integrated socio-technological model (Model 2 in Table 2) shows a higher explanatory power compared to the conventional technology-oriented model (Model 1 in Table 2). Model 2 explains about 29% of the variance in website use, which is greater than the variance explained by Model 1. This suggests that it is desirable to take into account not only the attitudes toward e-government technology but also the attitudes toward public service work.

In sum, public managers are found to be more likely to use their city websites when they perceive that the websites are more useful, easier to use, and superior in terms of information quality and functions. These positive effects remain robust with or without considering work attitudes. Hence, the first three hypotheses are supported by the data; perceived usefulness (H1), perceived ease of use (H2), and website quality (H3) influence the use of website in a positive direction.

Furthermore, commitment to public service is found to be a critical factor facilitating website use (H4). The more committed public managers are to public service, the more likely they are to use city website. This strong linkage between public service commitment and website use supports the relevance of my integrated approach to individual attitudes toward not only technology (“e”) but also public service work (“government”).

### 5. Conclusion

Public managers are more proactive than expected in their website use at work. Almost three fourths of managers are found to use their website when they respond to citizens’ requests. Still, the degree of website use varies across individuals.

The quality of website matters. If public managers perceive websites to be equipped with high quality information and functions, they take advantage of them. At the same time, perceived usefulness and ease of use regarding city website also facilitate technology use. In accordance with existing studies, technology attitudes matter.

More importantly, significant effects of work commitment suggest that public managers are often motivated by their intrinsic valuation of public services. Even when public managers do not see clear advantages from city website, they still use the website once they think the website meets their desire to serve the public. The greater coefficient of public service motivation in my model (Model 2 in Table 2) suggests that managers’ commitment to public service plays a more important role than attitudes toward technology itself.

This paper provides a meso-level model explaining individual technology use within public organizations; controlling for technical and organizational conditions,
this paper examines the effects of individual attitudes toward not only technology but also public service work. This contributes to the theoretical development to develop a context-specific theorization of technology use in the public service sector.

Still, future research is necessary in order to better understand the individual determinants of e-government technology use within a public organization. First of all, an in-depth analysis on the dynamic interactions between independent variables is necessary, since subsequent studies [10, 24, 31] after Davis’ [9] work indicate that perceived usefulness and perceived ease of use are associated with subjective norms, output quality, job characteristics, organizational conditions, and social influence. Perceived website quality can be related with perceived usefulness or perceived ease of use [34], and these relations might have an additional influence on managers’ website use. Public service commitment brings in an additional complexity; interactions between work attitudes and technology attitudes need further investigations. More advanced modeling approaches, such as the structural equation modeling, can be helpful to decompose complex relations among independent variables and direct and indirect impacts of each variable on public managers’ website use.

In addition, a more extensive study on a broader range of ICT is necessary to fully understand the status of e-government technology use. Public managers may be more frequently use e-government technology than presented in this paper, because the use of city website only captures a part of e-government technology. If we consider a full range of e-government technology which public managers encounter, the use pattern might be more active than described here. However, we might observe the opposite. Since the use of website examined in this paper is mainly related to one-way information provisions, it is still possible that other interactive two-way communication technology remains under-utilized. The existing concerns on the underutilization of e-government technology [4, 5] might not completely relieved by the findings of this paper. Indeed, it is reported that two-way communication technology is still less common than one-way information provision in US local governments [1, 29, 53]. Future research is necessary to better understand the utilization of e-government technology among public managers. Especially, it requires more studies to have a better picture of two-way communication technology use among government employees.

References

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