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Identifying the Antecedents of Public Trust in the Citizen-Centric E-Governance

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Abstract: For the success of e-governance, its focus must shift to a value-oriented and citizen-informed approach that is called citizen-centric e-governance. Trust is one of the most important issues that lead citizens to use a citizen-centric e-governance system. However, its role in accepting and using e-governance systems has not been investigated enough. The primary purpose of this study is to explore and identify the antecedents of public trust in citizen-centric e-governance. By reviewing related literature, the antecedents of public trust were extracted and tested via the survey method. Information accessibility, system quality-security, and regulation and policy environment were identified as the antecedents of public trust. Using the data of 356 questionnaires, the developed hypotheses in the research were tested via the structural equation modeling (SEM) technique. The results confirmed that the relationship between system quality-security and regulation and policy environment with public trust were significant. However, the influence of information accessibility on public trust was not significant among the research population.

Keywords: Citizen-Centric, E-Governance, Public Trust

Introduction

The rapid evolution of new technologies has created challenges for all governments, and citizens are becoming electronic communities that formulate, influence, and contribute toward their own "public value" (Riley, 2003). E-governance has been located between two global shifts, the governance revolution and the information revolution. Both of these shifts are changing the way that society is governed and the way society works (Heeks, 2001). Basically, the political debate now considers that the Internet and the Web will play a crucial role in transforming relationships between the state and citizens. Therefore, it can be considered that e-governance is the next step for e-government development (Kolsaker & Lee-Kelley, 2007). According to Kašubienė, and Vanagas (2007, p. 70), citizens are more likely eager to use e-government portals that are designed to address their needs and are indeed citizen-centric. According to Singh and Singh (2018), by automating and accelerating the government-citizen relationship with ensuring governance transparency, e-governance has the capacity of a package of benefits to citizens. However, despite the global diffusion of e-governance programs, the claimed benefits of e-governance have not been easily attained for various organizational and technological causes (Saxena, 2005). Several studies have shown that e-governance in realism has been unsuccessful in reaching what it promises before (Liu et al., 2008; Madon, 2004; Reichheld and Markey, 2000). There are many reasons

for failure, and according to Heeks (2001), a major reason is a mismatch between the new system and the present reality. The implementers fail to recognize the difference between the social context, including people, culture, politics, etc., it operates and the real technology (Dada, 2006). Saxena (2005) has emphasized that the reason for the high rate of failure in e-governance initiatives is often a techno-centric concentration rather than a citizen-centric one. For the success of e-governance, the focus of it must shift to a value-oriented and citizen-informed approach (Kolsaker & Lee-Kelley, 2007). However, much of the research on e-governance focuses on the technical and practical factors, and this approach obscures an important and significant factor, the needs of users that here are citizens (Bertot & Jaeger, 2006). One of the most important subjects that lead citizens to use e-governance systems is trust. Therefore, the antecedents of public trust in a citizen-centric e-governance system should be identified to provide more insight into citizens' usage of e-governance systems.

Review of Related Literature

Public Trust

As Pavlou (2003) indicated, citizens need to be certain that their online communication with the government is safe since they use an open technological infrastructure, like the Internet. According to Belanger and Carter (2008), citizens will only use the e-government if they are certain it is reliable. Roy (2005) has claimed that public trust and public assurance are key factors of e-governance success. Several studies debated the citizens' needs for trust of e-government or e-governance and its effect on the success, usage, adoption, and satisfaction of these systems (Belanger & Carter, 2008; Shareef et al., 2011).

Service Quality-security

Security is typically one of the key aspects of e-governance systems (Murthy & Kumar, 2003) that citizens need. The definition of service quality-security is "support of citizens in their needs for security in e-governance systems."

Regulation and Policy Environment

There are several features that affect the citizens' intention to use and, in fact, actual usage of e-governance systems. Dawes (2008) and Paskaleva-Shapira (2006) have highlighted the significance of policies and regulations and their effect on e-governance success. Chauhan et al., (2008) have reported that legislation for driving and regulating e-governance has recently been enacted by various countries. UNDP (2010) called for public investments to provide the implementation and creation of e-governance regulations, policies, and legislation. The protocols, policies, and data management mechanisms will balance each citizen's privacy protection with efficient and effective usage of that information by the government (Dawes, 2009). Then, the readiness of these regulations and policies more assures those citizens to advance trust in using e-governance systems.

Information Accessibility

UNDP (2010) defined Information accessibility as "promoting the digitalization and dissemination of public information among the overall population." It also refers to promoting the formation of national regulation on Information accessibility, i.e., freedom of information acts. The dissemination and digitalization of public information among the whole population is one of the cross-cutting parts of an e-governance environment. There are a number of studies that support this notion (Dawes, 2008; Jaeger & Bertot, 2010; Jiang & Xu, 2009; Saxena, 2005; Shareef, et al., 2010). The governments have to promote the creation of national regulation on Information accessibility (A2I), which is critical for the success of e-governance systems since the accessibility makes the citizens trust the systems (Paskaleva-Shapira, 2006).

Theoretical Framework and Hypotheses Development

Public Trust and Service Quality-Security

Several studies have highlighted the role of security as an antecedent of citizens' trust in the e-governance or e-government systems (Akkaya et al., 2011; Belanger & Carter, 2008; Lean et al., 2009; Park, 2008; Shareef, et al., 2011). Better quality of e-governance services shapes better trust in citizens (Bhatnagar & Singh, 2010). Akkaya et al. (2011) indicated that when the government is the service provider, skepticism increases among the citizens. Principally, citizens have a tendency to suspect that the government lookouts everything and collects data about citizens through several channels (Belanger & Hiller, 2006). Consequently, citizens do not trust the government if they do not exactly recognize in what way the data collected is used by the public authorities (Akkaya et al., 2011). Therefore, the security features of e-governance systems are very important for building trust among citizens. According to Shareef et al. (2011), security issues are one of the potential providers in developing trust among citizens for the usage of e-governance systems. Based on these arguments, we posit the following hypothesis:

H1: Service quality-security will have a positive relationship with public trust in e-governance systems.

Public Trust and Information Accessibility

One of the aspects that increase the trust and confidence of the citizens in e-governance systems (Paskaleva-Shapira, 2006) is the dissemination and digitalization of public information among the whole population and the provision of specific conditions and rules for sharing, gathering, protecting, and using information by individuals, government, and the private sector via e-governance systems (Dawes, 2008, 2009). As it has been noted by the Pacific Council on International Policy (2002), more public Information accessibility via e-government makes the government more accountable to its citizens. Therefore, it enhances public trust. A study by Isaac (2007) shows that the availability of government information to citizens is one of the enablers of public trust in e-governance systems. Therefore, we posit the following hypothesis:

H2: Information accessibility will have a positive relationship with Public trust in e-governance systems.

Public Trust and Regulation and Policy Environment

Chen and Hsieh (2009) noted that the availability of regulation and policy on e-governance would encourage citizens to use these systems by attracting their trust. Actually, it occurs since citizens will feel much safer and more confident conducting online transactions with the government (Wong et al., 2007). Therefore, if citizens feel that they are not protected by laws and regulations and are exposed to misuse by e-governance systems, they will not use these systems. Consequently, the availability of policy and regulation is necessary for building public trust in e-governance. Therefore, we posit the following hypothesis:

H3: Regulation and policy environment will have a positive relationship with Public trust in e-governance systems.

The conceptual framework of the research can be drawn as Figure 1 based on the above discussion.

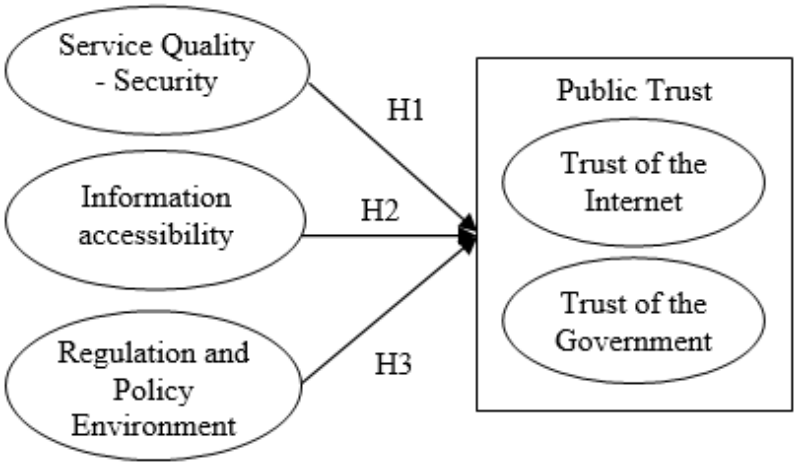

Figure 1. Conceptual framework

Method

The population of this research was the citizens who were familiar with government online services. Using the convenience sampling method, 356 questionnaires were collected. The measures used to evaluate variables are shown in Table 1.

Table 1. Measures

Variable	Dimension	No. of Items	Sources
Service Quality – Security	---	6	Dawes (2009), Kolsaker and Lee-Kelley (2008), Verdegem and Verleye (2009)
Information accessibility	---	3	Dawes (2009), Jiang and Xu (2009), Park (2008)
Regulation and policy environment	---	3	Chen and Hsieh (2009), Wong et al. (2007)
Public Trust	Trust of the Internet	3	Belanger and Carter (2008)
	Trust of the Government	4	Belanger and Carter (2008)

In order to measure each item in the questionnaire, a 5-point Likert scale that measures from "strongly agree" to "strongly disagree" has been used. The reliability test showed that the Cronbach alpha values for all the constructs were in the acceptable range, as shown in Table 2.

Table 2. Cronbach's Alpha for The Measurement Scales

Scale	Cronbachs' alpha
Service Quality – Security	0.786
Information Accessibility	0.722
Regulation and Policy Environment	0.876
Public Trust	0.865

Results

Descriptive Statistics

The characteristics of the respondents are: (1) 46% were males, and 54% were females, (2) 50% had used the applications of e-governance systems for more than three years, (3) 60% had a bachelor's degree or higher qualifications and (4) 51% were 30 years old or younger. Descriptive statistics (mean, standard deviation), composite reliability (CR), and average variance extracted (AVE) of all constructs are given in Table 3.

Table 3. Mean, standard deviation, composite reliability (Cr), average variance extracted (Ave)

Construct	Mean	Std. Deviation	CR	AVE
Service Quality-Security	4.6325	.50923	0.89	0.59
Information accessibility	4.1732	.69175	0.84	0.64
Policy Environment & Regulation	4.3408	.66709	0.91	0.78
Public Trust	3.2604	.92177	0.90	0.75

Testing of Hypotheses

The hypotheses were tested by running the SEM structural model using Amos software. The testing results (with significant relationships) are given in Figure 2. All hypotheses have been supported except the following. The hypothesis that links Information accessibility and public trust has not been supported. These imply that citizens do not consider Information accessibility as a key to enhancing public trust and increasing user satisfaction.

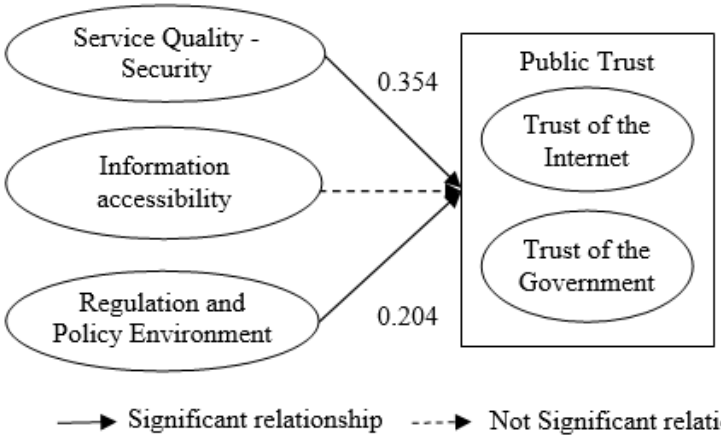

Figure 2: Research Framework with Hypothesized and Significant Relationships

Discussion

Our research has several significant findings. First, the positive relationship (β=0.354, p-value= 0.001) between service quality (security) and public trust is established. This relationship indicates that the more secure the e-governance systems are the more trust is developed by the citizens on these systems. The role of security as one of the antecedents of citizens' trust in e-governance systems has been emphasized by previous studies (Belanger & Carter, 2008; Lean et al., 2009; Park, 2008; Shareef, et al., 2011). The trust-building mechanisms are necessary for government agencies to make citizens feel confident about the security functions resulting in increased usage of e-governance systems. Second, the relationship between regulation and policy environments and public trust (β = 0.204, p-value = 0.019) is supported. The availability of policy and regulation on e-governance encourages citizens to have trust in the e-governance systems and use these systems. Dawes (2008) and Paskaleva-Shapira (2006) have highlighted the importance of regulations and policies for e-governance systems and their effect on system success. Wong, et al. (2007) has stated that the availability of policy and regulation makes citizens feel safer and more confident in performing online transactions with the government. The availability of privacy and security laws makes citizens feel confident with the authorities' intention to prevent criminal activities in cyberspace regarding privacy attacks or security violations of any e-governance system through unauthorized access by hackers. Facilitating laws and regulations on e-governance is also necessary to further encourage citizens to participate and interact online with the government.

Conclusions

This study has identified and analyzed the antecedents of public trust in the citizen-centric e-governance. Based on the result, the relationship between system quality-security and public trust, and regulation and policy environment and public trust were significant. Nevertheless, the influence of Information accessibility on public trust was not significant among the research population. It is recommended that this study be conducted in different countries with different e-governance systems to provide more insight into the antecedents of public trust in different contexts. If the policymakers and the government agencies that design and implement the e-governance systems notice the recommendations given in this study, the citizens' trust will increase, resulting in enhanced citizen satisfaction.

Scientific Ethics Declaration

The author declares that the scientific ethical and legal responsibility of this article published in EPSTEM journal belongs to the author.

Acknowledgements or Notes

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