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Determinants of electronic participation and electronic government maturity: Insights from cross-country data



Satish Krishnan^{a,*}, Thompson S.H. Teo^b, John Lymm^c

^a Information Technology and Systems Area, Indian Institute of Management Kozhikode, Kerala, India

^b Department of Decision Sciences, School of Business, Department of Information Systems, School of Computing, National University of Singapore, Singapore

^c Department of Information Systems, School of Computing, National University of Singapore, Singapore

ARTICLE INFO

Article history:

Received 1 November 2016

Accepted 5 March 2017

Keywords:

ICT infrastructure

Governance

Human capital

Government's willingness to implement

e-participation (e-information sharing, e-consultation, and e-decision-making)

e-Government maturity

Archival data

ABSTRACT

Utilizing the Technology-Organization-Environment (TOE) theory and the literature on citizen engagement, we formulated a multiple-mediation model examining (1) the TOE contextual factors affecting government's willingness to implement electronic participation (e-participation) in form of e-information sharing, e-consultation, and e-decision-making in a country and its electronic government (e-government) maturity; and (2) the mediating role of government's willingness to implement e-participation in a country on the relationships between its TOE contextual factors and e-government maturity. Specifically, we hypothesized that information and communication technology (ICT) infrastructure (representing the Technology context), governance (representing the Organization context), and human capital (representing the Environment context) has both direct and indirect relationships with e-government maturity through the mediating roles of government's willingness to implement e-participation. Based on archival data from 183 countries, results showed that while ICT infrastructure and human capital were positively associated with government's willingness to implement e-participation and e-government maturity, governance was not significantly associated with them. Also, government's willingness to implement e-participation had significant associations with its e-government maturity. Specifically, of three dimensions of e-participation, government's willingness to implement e-information sharing and e-decision-making were positively associated with e-government maturity, and its willingness to implement e-consultation was negatively associated. Further, government's willingness to implement e-information sharing, e-consultation, and e-decision-making partially mediated the influences of ICT infrastructure and human capital on e-government maturity. Results also indicated that the relationship of governance with e-government maturity was not mediated by government's willingness to implement e-participation. Findings contribute to the theoretical discourse on e-government by highlighting the roles of the TOE contextual factors on government's willingness to implement e-participation and e-government maturity, and provide indications for practice in managing e-government maturity by (1) enhancing government's willingness to implement appropriate e-participation dimensions; and (2) leveraging the effects of the TOE contextual factors on government's willingness to implement e-participation and e-government maturity.

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1. Introduction

Electronic government (e-government) maturity is defined as the extent to which a government in a country has established an online presence (Krishnan, Teo, & Lim, 2013b; Singh, Das, & Joseph, 2007; UN-Report, 2012). Maturity of e-government in a

country is expected to bring in several benefits such as (1) cost reduction and efficiency gains; (2) improved quality of service delivery to its citizens and businesses; (3) transparency, anticorruption, accountability and democratization; and (4) national and business competitiveness (Kim, Kim, & Lee, 2009; Ndou, 2004; Sang and Lee, 2009; Srivastava and Teo, 2007; Von Haldenwang, 2004). With the objective of achieving the aforementioned benefits, and to further the growth and maturity of e-government, governments across the globe are spending a massive amount of resources. To illustrate, a report released by Kable (a leading provider of public-sector research) indicate that the United Kingdom's (UK) central government spending on information and communication

* Corresponding author.

E-mail addresses: satishk@iimk.ac.in, iamsatishk@gmail.com (S. Krishnan), bizteosh@nus.edu.sg (T.S.H. Teo), john.lymm@nus.edu.sg, jlymm@comp.nus.edu.sg (J. Lymm).

technologies (ICTs) for the year 2007/2008 was £3.2 billion (and estimated to spend about £4.2 billion in 2010/2011) (Kable, 2006). Another report by Pulliam (2005) mention that the United States (US) spent US\$4.2 billion in 2004 (and estimated to spend about US\$5.8 billion in 2009) for its e-government expenditures. Similarly, Russian Federation spent around US\$2.3 billion in 2006 for the informatization of its federal government bodies and other initiatives pertaining to e-government (UN-Report, 2012). Yet, despite such significant investments, the failure rate of e-government projects remain high. For instance, a study by Heeks (2008) indicate that 35% of e-government initiatives are “total” failure whereby the initiatives were never implemented or were implemented but immediately abandoned. An identical conclusion was reached in Accenture, 2007 report on e-government in which it is documented that despite significant strides being taken by most countries in the provision of public e-services, most e-government endeavors have fallen short of their potential. Further, a recent global study by the United Nations (UN) indicate that the progress of e-government growth and maturity “remain uneven” across many countries worldwide (UN-Report, 2012). In sum, despite numerous motivations and service targets underlying public institutions, furthering e-government and reaching the stage of maturity is a challenging task faced by government agencies in most countries.

Motivated by the aforesaid challenge faced by majority of governments worldwide, several studies of qualitative nature consisting of detailed case studies of successful e-government projects have been undertaken by researchers to uncover the factors affecting e-government growth and maturity. For instance, Devadoss, Pan, and Huang (2002) analyzed the development of a government e-procurement application using a model based on the structuration theory, and developed a classification of factors involved in e-government initiatives. Ke and Wei (2004) traced the development of a single ministry’s e-government efforts to highlight how the critical success factors evolved as the ministry went through different stages of reform. Chen, Pan, and Huang (2009) utilizing the perspectives of modularity and societal learning, demonstrated how localized e-government efforts in Shanghai (China) may be implemented throughout the tiers of the municipal government, and presented an e-government model that can be diffused to other parts of the country. Similarly, Chan, Hackney, Pan, and Chou, (2011) utilizing resource enactment perspective developed a model on how organizational resources could be mobilized for successful e-government implementation. In sum, while such studies are particularly valuable to those who undertake similar initiatives, they do not attempt to assess the comparative success of different governments in realizing the potential of e-government. To that end, the major purpose of this study is to identify “the contextual factors” affecting e-government maturity from a global perspective (i.e., from a cross-country level). Though the need for conducting such macro-level quantitative empirical studies is largely stressed in past literature (e.g., Siau and Long, 2006; Srivastava and Teo, 2010; Zhao, 2011), researchers (with a few exceptions – e.g., Krishnan, Teo, & Lim, 2013a; Krishnan et al., 2013b) often ignored or overlooked them for two reasons. First, there is a lack of cumulative theoretical development in e-government research to develop an empirical study addressing macro-level issues (Alcaide-Muñoz, Pedro, & Bolívar, 2015; Heeks and Bailur, 2007). Second, collecting large scale primary data (spanning several countries) to empirically test the formulated research model is constrained by the amount of resources and time available for conducting such research (Krishnan and Teo, 2012; Srivastava and Teo, 2008; Zhao, 2011). In sum, the purpose of this study is not only to offer several policy implications but also to help identify and understand aggregate patterns of e-government that might shed new ideas in the fields of practice.

The success and institutionalization of an e-government initiative in a country is contingent upon “citizen engagement,” a key to its growth and maturity (Chan and Pan, 2008; Krishnan et al., 2013a). Olphert and Damodaran (2007) indicate that the uptake of e-government services are disappointing in the relative view of its maturity and the significant amounts invested in their growth and development, and propose citizen engagement as a “key” to overcome such a situation. According to the Organization for Economic Cooperation and Development (OECD, 2001), citizen engagement is defined as the active participation of citizens, in partnership with government, in decision- and policy-making processes. The concept of citizen engagement is exercised through electronic participation (e-participation; Phang and Kankanhalli, 2008), which can principally be understood as ICT and the Internet mediated interaction between the civil society sphere and the formal politics sphere, and between the civil society sphere and the administration sphere (Sæbø, Rose, & Flak, 2008). Consequently, it is the total sum of (1) the government programs to encourage participation from its citizens, representing the supply-side with governments as the focal point; and (2) the willingness of the citizens to participate in decision- and policy-making processes, representing the demand-side with citizens as the focus of concern (Krishnan et al., 2013a; UN-Report, 2008).

Emerging research on e-participation can be broadly classified into three streams. First, descriptive and anecdotal studies, while offering benchmarks for practitioners to access and evaluate their practices pertaining to e-participation, provide little value to theory (e.g., Norris and Reddick, 2013). Second, studies that focus on the demand-side of e-participation (i.e., citizens’ perspective) rather than the supply-side (i.e., governments’ perspective) with reference to a particular geographical region. For instance, a study by Colombo (2010) uncover the factors in the impulse of citizen participation experiences in public decision-making at the local-level with the specific focus on Catalonia, one of the Spanish and European Union geographical area. A third stream is the case studies that are micro in orientation (e.g., Chan and Pan, 2008; Olphert and Damodaran, 2007), and studies that are conceptual in nature (e.g., Phang and Kankanhalli, 2008; Sæbø et al., 2008). In sum, while these studies address important aspects of academic research, they cannot possibly address the broad macro-level issues pertaining to e-participation. Therefore, it is evident that there is a dearth of macro-level quantitative empirical studies examining e-participation from the supply-side (i.e., government) perspective. Motivated by this, in this study, we focus on the government-to-citizen (G2C) aspect of e-participation, and adopt the definition as defined by the UN: the willingness of governments to use ICT tools for the purpose of empowering people for able participation in consultations and decision-making, both in their capacity as consumers of public services and as citizens (UN-Report, 2010).

Studies indicate that governments that are willing to implement e-participation in form of e-information sharing, e-consultation, and e-decision-making (Krishnan et al., 2013a; UN-Report, 2008) can achieve the objectives of citizen engagement namely (1) informing citizens; (2) generating support among citizens; (3) utilizing citizens’ input in decision-making; and (4) probing for citizens’ needs (Phang and Kankanhalli, 2008). While government’s willingness to implement e-information sharing is concerned with its disposition to offer tools (e.g., web forums, e-mail lists, newsgroups, chat rooms, etc.) for dissemination of information (e.g., list of elected officials, policies and programs, and point of contact) on their websites for timely access and use by citizens, its willingness to implement e-consultation is concerned with the disposition to encourage citizens’ participation in discussions by offering a choice of public policy topics online with real time and archived access to audios and videos of public meetings. And, government’s willingness to implement e-decision-making is related to its

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