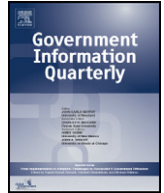




Contents lists available at ScienceDirect

Government Information Quarterly

journal homepage: www.elsevier.com/locate/govinf



Review

Diffusion of e-government: A literature review and directions for future directions



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ARTICLE INFO

Available online 14 June 2014

Keywords:

Diffusion of e-government
Literature review
Influencing factors
Theoretical foundation
Research methods

ABSTRACT

In recent years, there has been an increasing amount of research published on the topic of e-government diffusion. This paper provides a meta-analytic review of the literature on the diffusion of e-government. We analyzed the related literature in the leading journals and from international conferences in the field of information systems and public administration. Our analytical results reveal the main theoretical foundations, research methods, and research topics found in the relevant literature. The meta-analysis identified four main research topics: (1) the factors that influence the diffusion of e-government, (2) the diffusion of e-government systems and applications, (3) the impacts of e-government diffusion on government agencies and employees, and (4) the relationships between information and communication technology (ICT) infrastructures and the diffusion of e-government. Researchers have developed eight related theories to discuss e-government diffusion and adopted four methods to explore it. We suggest directions that researchers should pursue to strengthen the diffusion of e-government and to draw out deeper issues.

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1. Introduction

E-Government has become a primary trend in the information revolution and almost every country in the world has been part of it (Taylor, Miriam, & Organ, 2007). Given that e-government is an important area of information technology (IT) and information systems innovation,

governments have been attempting to incorporate e-government into their existing information system applications and government processes (Alshehri & Drew, 2010). The development of e-government capabilities is an important undertaking because it is not only rapidly changing the way that governments supply information, deliver services, and deal with the public, but they are also becoming an integral part of government strategies.

Rogers proposed diffusion of innovation (DOI) (Rogers, 1995), which was introduced into the field of e-government and used for research on the adoption and diffusion of e-government. Adoption and

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diffusion issues are important subjects for rating e-government success and have been highlighted in recent studies about e-government (Al-Hadidi & Rezgui, 2010). Consequently, diffusion of e-government is an emerging topic in the field of e-government. Existing studies on the diffusion of e-government provide initial suggestions based on theoretical considerations, experience reports, explorative case studies and empirical research. These articles are important in helping us understand the issues of e-government diffusion.

While there is an initial body of research on the diffusion of e-government, there is considerable room for improvement. First, although e-government has been adopted by different levels of government in both developed and developing countries, the diffusion of e-government has not gained expected momentum or demonstrated outcomes (Anthopoulos, Siozos, Nanopoulos, & Tsoukalas, 2006; Ferro & Sorrentino, 2010; Korteland & Bekkers, 2007; Schaupp, Carter, & McBride, 2010). Second, the diffusion process of e-government is not synchronous around the globe (Heeks, 2004). Third, due to the fact that e-government is in a transition period (Gil-Garcia & Martinez-Moyano, 2007; Norris, 2010), governments need to introduce new notions into their e-government strategies in order to serve people better. Thus, exploring how innovative e-government systems and applications diffuse in the public sector has become a pressing issue. Finally, there are some issues about the diffusion of e-government that have not been fully understood, e.g. the diffusion mechanisms and diffusion processes of e-government diffusion.

For any academic project, a review of prior and relevant literature is essential in order to establish a powerful foundation and build on the established knowledge (Webster & Watson, 2002). Unfortunately, current studies on the diffusion of e-government are scattered. Until recently, there were few reviews that summarized and organized the literature on diffusion of e-government.

The main purpose of this paper is to provide a meta-analytic review of the literature on the diffusion of e-government and to put forward recommendations for future research. This review also contributes to practical aspects of the diffusion of e-government.

In order to achieve the aforementioned aim, the paper is structured as follows. Section 2 identifies the relevant source materials for the study. Section 3 reviews the main theoretical foundations, research methods and research topics regarding the diffusion of e-government. Section 4 provides a discussion and proposals for further research. A conclusion is presented in Section 5.

2. Literature review approach

This research review on the diffusion of e-government sought to identify the recent literature on the basic issues, so that academics and practitioners can be brought up to date and guided toward the relevant, available research. We used an approach to determine the source material for the review that was proposed by previous researchers (Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004; Levy & Ellis, 2006; Webster & Watson, 2002).

First step: search literature in leading journals and from international conferences. Because the research on e-government diffusion is interdisciplinary, we included information systems, management and public administration research in our search. We read articles from IS World's top 50 ranked MIS journals and 16 IS conferences (Levy & Ellis, 2006), and PA World's top 10 ranked public administration journals (such as *Public Administration Review*, *Public Performance Management Review*, *Journal of Public Administration Research and Theory*, and *Government Information Quarterly*) and 10 related PA conferences (such as *HICSS*, *dg.o*, and *ICEGOV*).

Second step: conduct a keyword search of literature and books in a data-base in our university library.² The data include ProQuest

Table 1
Theories present in literatures.
Source: literature review.

Theory	References
Diffusion of innovation theory	Mergel and Collm (2010); Fedorowicz and Gogan (2010); Yeloglu and Sagsan (2009); Moon (2005)
Group theory	Mwangi (2006)
Public goods theory	Weare et al. (1999)
Cultural theory	Choudrie et al. (2010)
Model of micro-political arenas	Dovifat et al. (2007)
Technology acceptance model	Carter (2008)
Communication model	Wang and Doong (2010)
Collaboration perspective	Ferro and Sorrentino (2010)

(ABI/INFORM), Elsevier (Science Direct), IEEE (Comp Soc & Xplore), Thomson (G. Bus, OneFile), ACM (Digital Lib), JSTOR, EBSCOhost, SAGE, Wiley Online Library, Emerald, and IGI Global (IGI Global Journal & Database). The keywords and terms include *diffusion of e-government*, *e-government diffusion*, *diffusion of e-gov*, *e-gov diffusion*, *e-government innovation*, and *diffusion of m-government*.

Third step: search reports and working papers about e-government, such as the UN's Global E-Government Development Report (2001, 2003, 2004, 2005, 2008, and 2010)³ and the University of Manchester IDPM's iGovernment Working Paper Series (1–21).⁴

3. Findings

3.1. Theoretical foundations

Studies on e-government diffusion referred to diverse theories and models as important theoretical underpinnings of their causal arguments (see Table 1). These theories and models include the diffusion of innovation theory, group theory, public goods theory, culture theory, model of micro-political arenas, technology acceptance model, the communication model and a collaboration perspective. Since research on e-government diffusion is increasingly inter-disciplinary, the theories employed are from diverse disciplines, including sociology, political science, management, communication studies and information systems.

E-Government is an interesting and useful case for the study of innovation diffusion (Jun & Weare, 2010). Most of the studies explicitly referred to the theory of innovation diffusion as an important theoretical underpinning of their causal arguments (Raus, Flügge, & Boutellier, 2009). Diffusion of innovation is used to frame the challenges facing e-government diffusion and influencing the factors of e-government diffusion (e.g. Al-Hadidi & Rezgui, 2010; Al-Sobhi, Weerakkody, & Al-Shafi, 2009; Choudrie, Umeoji, & Forson, 2010).

In addition, theories and models from other disciplines are also used, including group theory (Mwangi, 2006), public goods (Weare, Musso, & Hale, 1999), and culture theories (Choudrie et al., 2010), the technology acceptance (Carter, 2008), micro-political arenas (Dovifat, Brüggemeier, & Lenk, 2007), and communication models (Wang & Doong, 2010) and the collaboration perspective (Ferro & Sorrentino, 2010) are adopted in order to explain the influencing factors of e-government diffusion.

It is notable that just a few theories are the basis of research on e-government diffusion and as a result some papers on the subject are not sufficiently informed. Therefore, in order to further our understanding of e-government diffusion, the introduction of a new theory and a deeper theoretical discussion has become top priorities in the field of e-government diffusion.

³ http://www2.unpan.org/egovkb/global_reports/05report.htm.

⁴ <http://www.sed.manchester.ac.uk/idpm/research/publications/wp/igovernment/index.htm>.

² <http://202.114.9.3/dzzy/dzzy2011.nsf/waiwen?OpenPage>.

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