E-government research in the United States

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ABSTRACT

The purpose of this exploratory study is to review scholarly publications and assess egovernment research efforts as a field of study specific to the United States e-government environment. Study results reveal that researchers who focus on the U.S. e-government environment assess specific e-government topics at the federal, state, and local levels; however, there are gaps in the research efforts by topic areas and across different levels of government, which indicate opportunities for future areas of research. Results also find that a multitude of methodology approaches are used to assess e-government. Issues, however, exist that include lack of or weak presentations of methodologies in publications, few studies include multi-method evaluation approaches for data collection and analysis efforts, and few studies take a theory-based approach to understanding the U.S. e-government environment.

1. Introduction

Governments engage in e-government activities to improve the effective and efficient delivery of information and services through the use of information communications technology (Codagnone & Wimmer, 2007; UNPAN, 2010). In general, the intent of e-government is to provide new opportunities and benefits to citizens, businesses, and governments around the world (Jaeger & Thompson, 2003); serve as a necessary force for better governance (Gupta & Jana, 2003); and create citizen-centered openness in government (Daniels, 2001). E-government is entrenched as an accepted government activity with the potential to improve the effective and efficient delivery of government information and resources to citizens at different levels of government in many countries.

Researchers assess e-government at an international level (Helbig, Gil-Garcia, & Ferro, 2009; Wimmer, Codagnone, & Janssen, 2008). Understanding e-government at an international level is important as nations increasingly share information; however, at a national level, countries develop sets of directives that guide how their governments apply e-government to provide their citizens access to national, regional, and local government services and resources (McClure & Jaeger, 2008). E-government is applied based on national and local sets of directives. The need exists for each country to understand and improve the effective and efficient use of e-government for information exchange at an international level. The need also exists, however, for countries to improve effective and efficient delivery of e-government services and resources to meet the information needs of their citizens at the national and local levels.

The purpose of this exploratory study is to review scholarly publications and assess e-government research efforts as a field of study specific to the United States (U.S.) e-government environment. Study results reveal that researchers who focus on the U.S. e-government environment do so at the federal, state, and local levels; however, there are gaps in the research efforts across the different levels of government research, which indicate opportunities for future areas of research. Results also find that a multitude of methodology approaches are used to assess e-government. Issues, however, exist that include lack of or weak presentations of methodologies in publications, few studies include multi-method evaluation approaches for data collection and analysis efforts, and more theory-based research is needed to understand the U.S. e-government environment as a field of study.

2. U.S. e-government research

The U.S. government information technology (IT) budget for 2011 was $79.4 billion – a 1.2% increase from the 2010 budget – and approximately 10% of the IT budget was spent on e-government initiatives, which is nearly $8 billion per FY for 2010 and for 2011 (Baumgarten & Chui, 2009: OMB, n.d.). The private sector has long used IT to improve the effectiveness and efficiency with which it provides customer service; however, the U.S. federal government "has missed out on that transformation due to poor management of technology investments, with IT projects too often costing hundreds of millions of dollars more than they should, taking years longer than necessary to deploy, and delivering technologies that are obsolete by the time they are completed" (E-Government & Technology n.d., para. 1). Typically, new e-government initiatives are not operationally efficient and many have not "generated the anticipated interest among users" (Baumgarten & Chui, 2009, p. 26). Many federal e-government initiatives are not

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effective or efficient and research is needed to identify what works well, what does not, and how to improve implementation of the initiatives and increase public engagement.

Researchers assess a range of e-government perspectives to understand the effectiveness and efficiency of initiated, operationalized, and implemented e-government initiatives and the technology that enables e-government adoption and use. E-government perspectives include government initiatives and policies that guide e-government development and the initiation of e-government processes (Coglianese, 2009; Dawes, 2010; McCarthy & Yates, 2010; McClure & Jaeger, 2008), the ways in which governments manage, operationalize, and engage in e-government activities (Carrizales, 2008; Jaeger & Matteson, 2009; Ladner, Petry, & McCreedy, 2008), the technology that enables operationalization and engagement (Ahn, 2010; Moynihan, 2008; Reddick, 2011), and the implementation and presentation of government information and resources through websites and other means for public interactions (Armstrong, 2011; Baker, 2009; Olalere & Lazar, 2011).

Some researchers assess scholarly publications as the means to identify common research themes, aspects, and findings across the body of work for e-government topic areas. These efforts can identify gaps in overall efforts and future areas of needed research for a specific topic area. E-government topic area examples include understand that policy research provides critical e-government assessment tools (McClure & Jaeger, 2008), identify usability benchmarks to advance e-government performance (Baker, 2009), understand internet information-seeking behavior for access to government records (Cuillier & Piotrowski, 2009), develop an e-government evaluation framework using a classification of methodologies approach (Gupta & Jana, 2003), and utilize grounded theory to analyze e-government initiatives (Lee & Kim, 2007).

Jaeger and Thompson (2003) assessed articles from an *E-government around the world: Lessons, challenges, and future directions* symposium and discovered gaps in the research efforts. A central point of the symposium was to develop methods and performance indicators capable of assessing e-government services and standards. The authors found that "the limited amount of assessment of the 'demand, benefits, and service quality' of e-government initiatives 'remains a major weakness'" (p. 391). Researchers of the European Union eGovRTD2020 project conducted an international-level (the European Union, Australia, and the United States) e-government technology mapping effort. The researchers identified gaps in research efforts needed to advance e-government technology in terms of future technology use goals and initiatives (Codagnone & Wimmer, 2007).

Other researchers review scholarly works to understand the maturity level of e-government as a field of study. Norris and Lloyd (2006) analyzed the type and quality of empirical scholarly works available from the first known e-government-based articles through the end of 2004. Their content analysis of 57 located articles included 12 descriptive categories (i.e., about the journal, type of article, about the author, theories and hypotheses, and others) and two qualitative categories that include adequacy of literature review and support for conclusions. Heeks and Bailur (2007) analyzed 84 e-government-based scholarly works published between 2001 and 2005 along five primary aspects that include perspectives on the impacts of e-government, research philosophy, use of theory, methodology and method, and practical recommendations that authors provide from their work. Assessments such as these identify strengths, weaknesses, and gaps in prior research efforts and provide insights for future efforts needed to understand the maturity level of e-government research as a field of study.

The intent of research to understand e-government as a field of study is to gain an understanding of the complex and multidisciplinary aspects of the e-government environment by exploring the environment's political nature, initiatives, and policy processes (Coglianese, 2009; Dawes, 2010; McCarthy & Yates, 2010; McClure &

Jaeger, 2008); acceptance, management and operational practices (Carrizales, 2008; Jaeger & Matteson, 2009; Ladner et al., 2008); IT-based implementation practices (Ahn, 2010; Armstrong, 2011; Baker, 2009; Moynihan, 2008; Olalere & Lazar, 2011; Reddick, 2011); and user interactions with e-government services and resources (Baker, 2009). Assessments of e-government scholarly publications provide insights of research topics, relationships between the topics, the multidisciplinary aspects of research efforts, and also insights about e-government as a field of study.

Prior studies of e-government as a field of study (Heeks & Bailur, 2007; Norris & Lloyd, 2006) include research of e-government research practices in the United States and at the international level through 2006/2007. No studies, however, have specifically focused on e-government as a field of study where the focus is solely on the U.S. e-government environment. This study analyzes scholarly publications where research efforts are specific to the U.S. e-government environment.

3. Methodology

The purpose of this exploratory study is to review scholarly publications and assess e-government research efforts as a field of study specific to the U.S. e-government environment. Research questions that direct the study are: how do researchers assess the U.S. e-government environment; can the assessments inform us about U.S. e-government research efforts as a field of study; and what future areas of research, if any, are needed to understand the U.S. e-government environment as a field of study?

The research questions presented above guide the development of study goals, objectives, data collection methods, and data analysis efforts. The goal is to understand U.S. based e-government research efforts. Objectives to meet this goal include: identify e-government areas assessed by research efforts; determine how researchers assess the e-government areas; identify issues and gaps in the research efforts; assess e-government areas as a field of study; and provide recommendations for future e-government research efforts. Data collection methods developed to address the goal and objectives include a literature review and a content analysis of scholarly publications that focus on the U.S. e-government environment.

The literature review's primary data collection effort was to locate a multi-disciplinary target sample of 100 peer-reviewed scholarly publications published between 2007 and 2011. The date range provides a snapshot of five years of U.S. e-government-based research efforts. The research also begins towards the end assessment periods of former and similar research efforts conducted to gain an understanding of the maturity level of e-government as a field of study (Heeks & Bailur, 2007; Norris & Lloyd, 2006). To locate the sample publications, the study authors conducted an extensive search through peer-reviewed journals using the search terms "e-government", "government information", and "United States". All located articles were read by the authors to determine if an article meets the sample inclusion criteria, which are a focus on the U.S. e-government environment and publication between the years 2007 and 2011. Publications that did not meet inclusion criteria were excluded.

The authors began their search for articles in the *Government Information Quarterly* (GIQ) journal. This initial step was followed by a review of GIQ article reference and bibliography lists to locate additional journal titles. This initial search process identified 70 articles with a focus on the U.S. e-government environment in eleven journals. A second search was conducted through *Science Direct, Business Source Premier, ABI/INFORM Complete, Wiley Online Library, Directory of Open Access Journals*, and *Taylor & Francis* to locate 30 additional sample articles in eight additional journals. The final sample includes 100 scholarly publications collected from 19 peer-reviewed journals. Table 1 (see Findings Subsection 4.1 Literature review—study journals) presents