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E-service research trends in the domain of e-Government

A Contemporary Study

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A Contemporary Study

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ABSTRACT

Government 'e-service' as a subfield of the e-government domain has been gaining attention to practitioners and academicians alike due to the growing use of information and communication technologies at the individual, organizational, and societal levels. This paper conducts a thorough literature review to examine the e-service research trends during the period between 2005 and 2009 mostly in terms of research methods, theoretical models, and frameworks employed as well as type of research questions. The results show that there has been a good amount of papers focusing on 'e-Service' within the field of e-government with a good combination of research methods and theories. In particular, findings show that technology acceptance, evaluation and system architecture are the most common themes, which circa half of the studies surveyed focus on the organizational perspective and that the most employed research methods are case studies and surveys, often with a mix of both types of methodologies.

Keywords: Contemporary Research, E-Government, E-Service, Information Systems, Information Technology, Public Sector

INTRODUCTION

E-services, intended as services provided through the use of information and communication technologies (ICTs) are a recent technological innovation, which is designed to provide real-time, anyplace, 24/7 accessibility and high quality value added services at individual, organizational and societal levels. Until now, however, in the literature there has not been a universally accepted definition of e-services (e.g., Scupola et al., 2009).

Although the term 'e-service' is generally used in relation to e-services provided in different sectors among which the private and public sectors (e.g., Scupola et al., 2009), in this paper we refer only to government e-services, that is services provided by the government to the citizens through the use of information and Communication Technologies. For the purpose of this paper, we define e-services within the e-government domain as "the electronic delivery of government information, programs,

and services often (but not exclusively) over the Internet" (Dawes, 2002).

In recent years, e-government has become both an important research domain especially in the context of public policy and has gained strategic importance in public sector modernization (Wimmer et al., 2008). However, despite the growing demand for accessing government services through modern information and communication technologies, Wimmer et al. (2008) reported that there has been a deficiency in e-government research concerning the future government and ICT with specific focus on e-services. This study has been the main motivation to investigate the status quo of recent e-service research within the e-government domain, thus leading to the main research question of this paper: What are the methodological and theoretical trends of 'e-service' research within the e-government research domain in the last few years? In order to investigate the research question a thorough literature review of circa 150 papers (Webster & Watson, 2002) published over the period 2005-2009 has been conducted. The papers have been mainly analyzed according to the types of research question investigated; the theories used as well as the unit of analysis (perspective) and research methods employed (Webster & Watson, 2002). The major contribution of this article lies therefore in providing a thorough and updated overview of e-services research within the e-government domain over the last few years.

The paper is structured as follows. In this introduction, the background, motivation and research question of the study have been provided. The following section describes the research method with special focus on the search process and criteria for information source selection, data collection and analysis. The next section presents and discusses the results, while the last section provides some concluding remarks and suggestions for future research.

RESEARCH METHODOLOGY

Selection of Papers

This paper is based on a systematic literature survey of papers published within the period between 2005 and 2009. As figure 1 shows, in order to make the research process rigorous, thus increasing the validity of the study, Webster and Watson (2002) guidelines for literature review and Grönlund and Andersson (2006) guidelines for paper selection and analysis have been adopted. According to Webster and Watson (2002, p. 4), "the major contributions are likely to be in the leading journals. It makes sense, therefore, to start with them. ..… You should also examine selected conference proceedings, especially those with a reputation for quality". In order to find the leading journals, the guidelines of AIS's 'Senior Scholars' Basket of Journals, as listed in Figure 1 had been explored. This search method also helped to frame the boundary of the literature review and to limit the content of the analysis.

Furthermore, other relevant journals within the e-services field (See Figure 1) were also selected. Being e-services a relatively young field of research, it was assumed that newer journals within the field contained also relevant and interesting research. Finally for identifying the conferences related to e-government, Grönlund and Andersson's (2006) suggestions have been mostly followed (See Figure 1), but also some other relevant conferences have been included.

Search Procedure

Webster and Watson (2002, p. 4) suggest that "a systematic search should ensure that you accumulate a relatively complete census of relevant literature". Here the literature search has been conducted through an iterative process mainly based on the analysis of the contexts as advised by Walsham (1995, p. 76). In particular, the steps suggested by Webster and Watson (2002) were
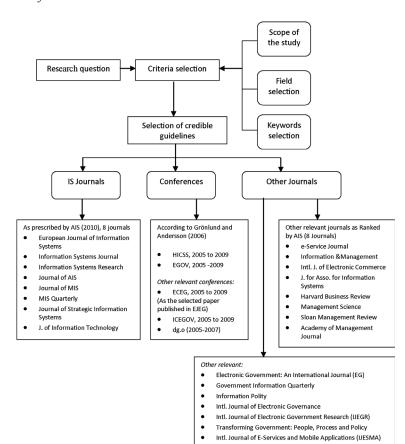
Figure 1. The Information source selection model

followed, which can be shortly summarized as follows: Locating papers published in leading journals initially from major journal database (e.g., ABI/Inform); Examining relevant reputed conference proceedings; Going backward by reviewing the citations for the articles identified. Going forward to other relevant sources (e.g., Web of Science); Discussing the scope of the research with colleagues or friends interested in the subject matter either prior to or after the completion of the paper; Developing a concept Matrix which may be augmented with Units of Analysis. To conduct the search, four major keywords (e-service, electronic service, e-government, public administration) were used alternatively or sequentially based on the situation. This technique was used both to narrow down the number of papers and to find and select the most relevant papers for the study.

Data Collection

Refining the data was the most critical part of the data collection process as inappropriate data would mislead the research outcome. Though initially 16 journals (Figure 1) from the AIS's 'Senior Scholars' basket were used, only 10 journals had come up with relevant contents. For example, searching with the keyword 'e-service' in 'e-Service Journal' had produced 167 matches. However, only 4 of them were initially found relevant to the domain of e-government which had been later reduced to 2 during the sorting of the content according to the study's

research objectives. Furthermore for example, Harvard Business Review did not provide any result on e-services and e-government in the given time period.

The data analysis process was based on a database especially developed for this paper by one of the authors as discussed by Grönlund and Andersson (2006). This database helped to analyze the data according to the study's research question and provided flexibility in generating partial reports in relation to any desired criteria. The fields of this database were filled with themes emerging from the research methods, research questions, theoretical frameworks and models and unit of analysis of the papers selected. In the analysis of the data, a number of tables and matrices were built and presented (e.g., Webster & Watson, 2002). As search stopping criteria, a systematic saturation point of data collection was used.

This data collection method has initially produced about 150 articles, which have finally been reduced to 95. Please see the list of selected conferences and journals with corresponding number of papers in Appendix 1.

RESULTS

As it is showed in Table 1, most of the papers analyzed focus on assessing the needs on the demand side of e-government services such as e-service acceptance, trust in e-services, project management and the crucial factors for e-services quality.

In particular, the theme 'acceptance' is particularly dominating in e-service research, followed by evaluation, architecture and trust (Table 1). Adoption of e-services (AlAwadhi & Morris, 2007; Tung & Rieck, 2005; Lee & Lei, 2007; Arendsen et al., 2008, Carter & Schaupp, 2009), barriers to access (Vassilakis et al., 2005) and e-tax filing (Fu et al., 2006; Hung et al., 2006) are some of major research sub-themes that are mainly covered under the 'acceptance' research theme. Project management, channel management and benchmarking are some of the new themes that emerged in 2009.

In addition, Tang (2006) distinguished three perspectives research can focus on: individual, organizational or society.

As Table 2 shows, 'e-service' research mainly focuses on the organizational perspective (53%), followed by the individual (27%) and societal (20%) perspectives. This trend is more evident in the papers published in the conferences than journals. As shown in table 2 in fact, 27% conference papers focus on the organizational perspective. This percentage is more than three times higher than the conference papers focusing on the individual perspective (8%). However this trend is quite balanced in case of journal publications with 26% of the papers focusing on the organizational perspective and 19% on the individual perspectives.

RESEARCH APPROACHES

In regard to the types of research approaches, the study found that, 'descriptive research' (45%) and 'theory generation' (40%) type of research are the most dominating ones, followed by the "theory utilization" (15%) approach (See Table 3 and Table 4). While the 'descriptive' approach explains the context and phenomena of an entity, the theory generation approach is mainly focusing on either developing new or refining existing theories. The latter type aims both at explaining certain phenomena and at reducing the research gap not adequately addressed by previous research. Finally, the studies that fall within the category "theory utilization" are mainly studies that examine the applicability of certain theories in a different setting.

As shown in Tables 5 and Table 6, regarding the research methodologies used, the case study and survey are significantly dominating the e-service research field. In fact, they together represent more than 85% of the prevailing research methods employed in the sample of papers analyzed here. It also appears that papers published in journals rely more on the case-study method in comparison to papers published in conference proceedings. However in many instances it has been found that the use of various forms of 'survey' methods

Table 1. E-service themes found in the period 2005-2009

Themes/keywords	2005	2006	2007	2008	2009	Total
Acceptance	4	2	4	2	3	15
Evaluation		3	4	1	7	15
Architecture	1		2	6	2	11
Trust	1		1	2	1	5
Challenges & Success factors	1	1		1	1	4
Service quality			3	1		4
Impact assessment		1		2	1	4
Need assessment		1	1	2		4
E-service (general)		1	1	1		3
Stakeholder			2		1	3
Strategies				1	2	3
Benchmarking					2	2
Effectiveness	2					2
Usability	1	1				2
Participation				2		2
Accessibility					1	1
Administrative burden			1			1
Availability				1		1
Business model			1			1
Channel management					1	1
Collaboration		1				1
Cross-agency integration			1			1
Democracy	1					1
Digital divide			1			1
Dynamic taxonomies			1			1
Infrastructure	1					1
Privacy			1			1
Project management					1	1
Return on Investment		1				1
Usefulness			1			1
Values				1		1
Total	**12**	**12**	**25**	**23**	**23**	**95 papers**

Table 2. Perspectives of e-service research (n=95)

Venues	Individual	Organization	Society
Conference	8%	27%	12%
Journals	19%	26%	8%
Total	27%	53%	20%

Table 3. Research approaches (n=95)

Venues	Descriptive	Theory generation	Theory utilization
Conference	19%	17%	12%
Journals	26%	23%	3%
Total	45%	40%	15%

Table 4. Types of research approaches and corresponding studies

Research Approach	Authors
Descriptive	Grönlund et al. (2007); Salhofer et al. (2008); Cullen & Reilly (2007); Anthopoulos et al. (2006); Vassilakis et Al. (2005); Zhenyu (2007); Chen et al. (2009); Gibson et al. (2009); Pelly & Sia (2007); Horan et al. (2006); Melin & Axelsson (2009); Lourdes et al. (2005); Pardhasaradhi & Ahmed (2007); Kaliannan et al. (2009); Chan & Pan (2008); Wendy & Leela (2007); Buccella & Cechich (2009); Balci et al. (2008); Janssen & Feenstra (2008); Roy, J. (2009); Kaaya, J. (2009); Asgarkhani (2005); Arendsen & Hedde (2009); Mitra, A. (2005); Sarikas & Weerakkody (2007); Yang & Paul (2005); Janssen & Klievink (2009); Ask et al.(2008); Kariofillis-Christos & Economides (2009); Lee at el. (2008); Stoica & Ilas (2009); Islam & Grönlund (2007); Anthopoulos et al. (2007); Deursen (2007); Hypponen et al. (2005); Kunstelj et al. (2007); Charalabidis et al. (2006); Connolly (2007); Carratta et al (2006); Tan et al. (2005); Furuli & Kongsrud (2007); Scupola et al. (2009); Axelsson & Melin (2007)
Theory generating	Anastasios & Vasileios (2008); Sehl & Faouzi (2009); Luka (2009); Verdegem & Verleyea (2009); Gouscosa et al. (2007); Verdegem & Hauttekeete (2008); Gasmelseid (2007); Hu et al. (2008); Golubeva & Merkuryeva. (2006); Janssen & Kuk (2007); Sahu & Gupta (2007); Carter & Schaupp (2009); Lepouras et al. (2008); Leben et al. (2006); Park (2008); Papadomichelaki & Mentzas (2009); Corradini et al. (2008); Velsen et al. (2008); Yu (2008); Axelsson & Melin (2008); Andersen & Medaglia (2008); Papadomichelaki et al. (2006); Wang et al. (2005); Belanger & Carter (2006); Benjamin & Whitley (2009); Boyer-Wright & Kottemann (2008); Pinho & Macedo (2008); Gallant et al. (2007); Shachaf & Oltmann (2007); Tung & Rieck (2005); Belanger & Carter (2008); Pentafronimos et al. (2008); Lee & Lei (2007); Carter & Belanger (2005); Chen et al. (2006); Mike & Anthony (2007); Kanat & Özkan (2009); Welch & Pandey (2007)
Theory utilization	Sacco, G. M. (2007); Fu et al. (2006); Kraussl et al. (2009); Klischewski & Ukena (2008); McLeod & Pippin (2009); Schaupp et al. (2009); AlAwadhi & Morris (2008); Arendsen et al. (2008); Chee-Wee et al. (2008); Magoutas et al. (2007); Phang et al. (2005); Magoutas & Mentzas (2009) ; Hung et al. (2006);

Table 5. Research methods (n=95)

Venues	Case study	Survey	Interpretive
Conference	18%	24%	5%
Journals	31%	14%	8%
Total	49%	38%	13%

Table 6. Types of research methods and corresponding studies

Research Methods	Authors
Case Study	Chen et al. (2006) ; Lee at el. (2008) ; Asgarkhani (2005); Connolly (2007); Furuli & Kong-srud (2007); Mike & Anthony (2007); Kraussl et al. (2009); Chen et al. (2009); Sarikas & Weerakkody (2007); Benjamin & Whitley (2009); Grönlund et al. (2007); Pardhasaradhi & Ahmed (2007); Balci et al. (2008); Buccella & Cechich (2009); Chan & Pan (2008); Fu et al. (2006); Roy, J. (2009); Sehl & Faouzi (2009); Luka (2009); Verdegem & Verleyea (2009); Gouscosa et al. (2007); Golubeva & Merkuryeva. (2006); Lepouras et al. (2008); Kanat & Özkan (2009); Kaliannan et al. (2009); Pinho & Macedo (2008); Kaaya, J. (2009); Janssen & Kuk (2007); Ask et al.(2008); Janssen & Klievink (2009); Melin & Axelsson (2009); Pelly & Sia (2007); Hu et al. (2008); Tan et al. (2005); Corradini et al. (2008); Velsen et al. (2008); Islam & Grönlund (2007); Kunstelj et al. (2007); Charalabidis et al. (2006); Carratta et al (2006); Wang et al. (2005); Phang et al. (2005); Hypponen et al. (2005); Klischewski & Ukena (2008); Janssen & Feenstra (2008)
Survey	Hung et al. (2006); Yu (2008); Carter & Belanger (2005); Gallant et al. (2007); Leben et al. (2006); Anthopoulos et al. (2007); Boyer-Wright & Kottemann (2008); McLeod & Pippin (2009); Deursen (2007); Papadomichelaki & Mentzas (2009); Arendsen et al. (2008); Kari-ofillis-Christos & Economides (2009); Arendsen & Hedde (2009); Anastasios & Vasileios (2008); Yang & Paul (2005); Chee-Wee et al. (2008); Magoutas & Mentzas (2009); Welch & Pandey (2007); Belanger & Carter (2006); Park (2008); AlAwadhi & Morris (2008); Gibson et al. (2009); Schaupp et al. (2009); Lee & Lei (2007); Horan et al. (2006); Axelsson & Melin (2008) ;Tung & Rieck (2005); Andersen & Medaglia (2008); Cullen & Reilly (2007); Stoica & Ilas (2009); Axelsson & Melin (2007); Sahu & Gupta (2007); Carter & Schaupp (2009); Shachaf & Oltmann (2007); Belanger & Carter (2008); Vassilakis, et al. (2005)
Interpretive	Mitra, A. (2005); Lourdes et al. (2005); Gasmelseid (2007); Papadomichelaki et al. (2006); Wendy & Leela (2007); Scupola et al. (2009); Salhofer et al. (2008); Zhenyu (2007); Magoutas et al. (2007) ; Verdegem & Hauttekeete (2008); Pentafronimos et al. (2008) ; Anthopoulos et al. (2006) ; Sacco, G. M. (2007)

is mixed with other methods, where the use of 'case study' is mostly common.

TYPE OF RESEARCH QUESTIONS

To conduct an analysis of the concepts contained in the surveyed papers, the research questions of each paper have been grouped based on four thematic categories – explorative, develop, evaluative and causal. These categories have been empirically determined based on the frequency of occurrences of similar types of research questions. The findings show (Table 7 and Table 8) that most of the research questions are explorative in nature followed by research questions trying to develop new research frameworks or ideas. Explorative research questions mainly investigate issues like status and functionalities (Zhenyu, 2007), adoption perception and process (Arendsen et al., 2009; Tung et al., 2005; Belanger et al.,

2008; Papadomichelaki, 2006), identification of barriers and success factors (Vassilakis et al., 2005; Islam & Grönlund, 2007), research gaps (Phang et al., 2005), and administrative literacy requirements (e.g., Grönlund et al., 2007), and understanding and explaining of new insights about certain practices, relationship or perceptions (Axelsson & Melin, 2007; Fu et al., 2006; Hypponen et al., 2005; Chan & Pan, 2008).

The following research questions or objectives are more or less common in such category: "To investigates the real driving forces concerning the 'demand' side of egovernment and the take-up of public e-services" - (Kunstelj et al., 2007); "Which factors influence the adoption of high impact governmental e-services" (Arendsen et al., 2008); "Why did the system fail, and what, if anything can be done to improve it" (Islam and Grönlund, 2007); "Understanding of citizens' needs regarding public e- services" (Axelsson & Melin, 2007); "Analyses the Finnish electronic prescription system against the ramifications given for a national infrastructure "(Hypponen et al., 2005); and "Elaboration on e-government systems implementation with a focus on user engagement" (Chan & Pan, 2008).

On the other hand, the main objectives of what here is called 'develop' type of research are either to develop or refine a new or existing theory, model or framework that can be used subsequently to explain a phenomenon under investigation. Examples include: "To develop a constructive, value-based approach to aid the realization of e-customs initiatives in real-life setting" (Kraussl et al. 2009); "Proposes a cost-benefit model for evaluating front-end e- government services" (Andersen & Medaglia, 2008).

The evaluative research approach generally tries to assess the impacts and expected returns on implemented electronic services in various contexts. Examples include: "Reviews the existing literature on public return on investment (ROI) and presents an assessment conducted on an Italian circuit of eGovernment services" (Carratta et al., 2006); "To evaluate the level of satisfaction derived by citizens while utilizing government-led ATIS services for trip planning" (Horan et al., 2006).

'Causal' research studies explore and experiment with the causal relationships and the post and pre-implementation effects of e-services on individual, organizational and societal perspectives. In this case, 'e-service' is considered an independent variable, whiler dependent variables are the associated outcomes or likely effects. The following are some examples of research questions: "Do e-services provide equitable online services to the public?" (Shachaf & Oltmann, 2007); "Do High Quality Websites matter for building Citizen Trust towards E-Government Services?" (Chee-Wee et al. 2008); "Explores the potential effects of the digital divide on e- government by surveying a diverse group of citizens to identify the demographic characteristics that impact use of e-government" (Belanger & Carter, 2006).

As in most of the IS research, also the research in government e-services mainly uses theories and frameworks with origins in other disciplines such as marketing, behavioral or social sciences. In fact, as shown in Table 8, although the analytical foundation of around 85% of the papers is based on some models or frameworks, 40% of these rely on self-designed research frameworks, many of which are extensions of existing theories. In addition, around

Table 7. Type of research addressed in the papers (n= 95)

Venues	Explorative	Develop	Evaluative	Causal
Conference	19%	19%	6%	3%
Journals	25%	7%	13%	13%
Total	44%	26%	19%	16%

Table 8. Theories and models used in different research approaches

RQ	Theories/models	Authors
Explorative	Self-designed models	Anthopoulos et al. (2007)Furuli & Kongsrud (2007); Golubeva & Merkuryeva (2006); Hu et al. (2008); Papadomichelaki et al. (2006); Kunstelj et al. (2007); Deursen (2007); Arendsen et al. (2008); McLeod & Pippin (2009); Welch & Pandey (2007); Belanger & Carter (2008) ; Verdegem & Hauttekeete(2008); Janssen & Kuk (2007); Chen et al. (2009); Pelly & Sia (2007)
	e-Government stage model	Stoica & Ilas (2009); Zhenyu (2007); Sarikas & Weerakkody (2007)
	Technology Acceptance models (TAM, TPB, UTAUT)	Lee & Lei (2007); Phang et al. (2005); Tung & Rieck (2005); Kanat & Özkan (2009); Fu et al. (2006); AlAwadhi & Morris (2008) ; Gallant et al. (2007)
	Intermediation theory	Janssen & Klievink (2009)
	Users perspective problem solving process	Grönlund et al. (2007)
	Stakeholder theory	Islam & Grönlund (2007); Chan & Pan (2008)
	Dynamic taxonomies	Sacco, G. M. (2007)
	Web information system's implementation plan	Anthopoulos et al. (2006)
	Descriptive (no model followed)	Scupola et al. (2009); Axelsson & Melin (2007); Cullen & Reilly (2007); Kaliannan et al. (2009); Kaaya, J. (2009); Arendsen & Hedde (2009); Ask et al.(2008); Tan et al. (2005); Mitra, A. (2005); Yang & Paul (2005); Gibson et al. (2009)
Develop	Self-designed models	Charalabidis et al. (2006); Buccella & Cechich(2009); Carter & Schaupp (2009); Gasmelseid (2007); Andersen & Medaglia (2008); Janssen & Feenstra (2008); Wang et al. (2005); Yu (2008); Velsen et al. (2008); Sehl & Faouzi (2009); Corradini et al. (2008); Boyer-Wright & Kottemann (2008); Chen et al. (2006); Kraussl et al. (2009); Axelsson & Melin (2008); Mike & Anthony (2007); Mike & Anthony (2007);
	Systems development life cycle	Melin & Axelsson (2009)
	Activity theory	Klischewski & Ukena (2008)
	Technology Acceptance models (TAM, TPB, UTAUT)	Carter & Belanger (2005); Schaupp et al. (2009)
	Value Theory (Value-Focused Thinking Approach)	Park (2008)
	Government Enterprise Architecture – Public Administration (GEA-PA) service model	Salhofer et al. (2008)
	Descriptive (no model followed)	Balci et al. (2008)

Table 8. continued

RQ	Theories/models	Authors
Evaluative	Self-designed models	Leben et al. (2006); Gouscosa et al. (2007); Pentafronimos et al. (2008); Horan et al. (2006) ; Anastasios & Vasileios (2008)
	e-GovQual/SERVQUAL/QeGS	Papadomichelaki & Mentzas (2009) ; Kariofillis-Christos & Economides (2009); Connolly (2007); Magoutas et al. (2007); Magoutas & Mentzas (2009)
	The reference model	Lee at el. (2008)
	Three-phase evaluation model	Hypponen et al. (2005)
	Technology Acceptance model	Verdegem & Verleyea (2009)
	Martin Heidegger's etymological enquiry	Benjamin & Whitley (2009)
	Service maturity and delivery maturity	Lourdes et al. (2005)
	XML Model	Vassilakis, et al. (2005)
	Descriptive (no model followed)	Roy, J. (2009); Pardhasaradhi & Ahmed (2007); Carratta et al (2006); Asgarkhani (2005)
Causal	Self-designed models	Pinho & Macedo (2008), Belanger & Carter (2006); Sahu & Gupta (2007); Lepouras et al. (2008)
	e-GovQual/SERVQUAL	Shachaf & Oltmann (2007)Chee-Wee et al. (2008)
	Stakeholder theory	Luka (2009)
	Technology Acceptance models	Hung et al. (2006)
	Enid Mumford's concepts	Wendy & Leela (2007)

17 per cent of the papers are fully descriptive and the arguments are validated mainly by empirical evidences or literature reviews. For example, the Technology Acceptance Model (TAM) (Davis et al., 1989), which explains the factors influencing the behavior of an individual to accept and use a new technology, is the most influential model in the studies of technology acceptance (Gefen & Straub, 2000) also in the case of e-service. Other technology acceptance theories, such as the Theory of Planned Behavior (TPB) (Ajzen, 1985) and Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) are also frequent in the study of e-service adoption. Finally, regarding e-service quality assessment, the service quality model – SERVQUAL, which originated from strategic business management domain and 'e-Government service quality model (e-GovQual)' in particular have been found to be quite used.

CONCLUDING DISCUSSION

This paper has conducted a literature review to examine the e-service research trends during the period between 2005 and 2009 mostly in terms of research methods, theoretical models and frameworks employed as well as the type of research questions and perspectives of the research. The results have shown that the number of publications focusing on 'e-service' within the e-Government research domain seems to have increased since 2005 with a peak in 2007. In particular the findings show that technology acceptance, evaluation and system architecture are the most common themes. Service or technology adoption and acceptance, quality assessment, stakeholder analysis and trust are the main subjects investigated. As for adoption and acceptance studies, TAM (Davis et al., 1989) is the most frequently used model. Furthermore,

among the various quality assessment models, SERVQUAL is widely used in the studies dealing with the e-services quality assessment. Most of the studies focus on the 'organizational' perspective, while the research approaches used are mainly descriptive or intend to generate new theory. However, given the growing use of government e-services in practice, there is a lot of unexplored potential for e-services research in the future especially addressing issues such as eGov 2.0, data security and data privacy. As the e-service topic is relatively new in the domain of e-government and IS in particular, the study found a lack of established models or theories in the field. In fact, most of the papers analyzed use self-designed models which are derived from or are combination of well known theories taken from other disciplines, such as service marketing or stakeholder theories. Some papers are mainly theoretical and are based on literature reviews (as it is the case for this study as well) and explain the e-service phenomenon in a descriptive way. In fact, regarding the type of research approach, the interpretive research is highly dominating. Regarding the research methods, this study found that case study and survey are more or less equally dominating research methods and in most cases both is used together with support from brief literature reviews.

Overall it can be concluded that within the e-government research domain, there has been over the period 2005-2009 a good amount of studies particularly addressing e-services, with a reasonable combination of research approaches, theories and methods.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

It has to be acknowledged that the above findings are indicative in nature as they are only based on a limited amount of papers and on a relatively short period of time. This is indicative in the sense that there might be more journal and conference papers that have been missed here due to the search criteria adopted as discussed in the method section. Nevertheless, the findings of this study help to provide a picture about the contemporary research trend in 'e-service' research within the e-government domain over the last 5 years.

Finally, regarding future research it is suggested here that more attention should be paid to the individual and societal perspectives of e-service research. More focus should also be put to emerging issues, such as eGov 2.0, data security and data privacy. These considerations are made in light of the spectacular advancement of information and communication technologies and their equal diffusion in all three levels: the individual, organizational and societal. The limitation of this study as discussed above, in turn, calls for future research focusing on more papers with extended span of time.

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APPENDIX I. LIST OF JOURNALS AND CONFERENCES USED IN THE STUDY

Conferences – 45 papers

International Conference on Theory and Practice of Electronic Governance (ICEGOV)	
1st Intl. Conference on Theory and Practice of Electronic Governance (ICEGOV2007) – 2	7
2nd Intl. Conference on Theory and Practice of Electronic Governance (ICEGOV2008) – 4	
3rd Intl. Conference on Theory and Practice of Electronic Governance (ICEGOV2009) - 1	
International Conference (EGOV)	
5th International Conference (EGOV 2006) – 3	18
6th International Conference (EGOV 2007) – 6	
7th International Conference (EGOV 2008) – 6	
8th International Conference (EGOV 2009) - 3	
Digital Government Society (dg.o 2007)	1
Annual Hawaii International Conference on System Sciences (HICSS)	
Proceedings of the 38th Annual Hawaii Intl. Conference on System Sciences (HICSS'05) – 4	19
Proceedings of the 39th Annual Hawaii Intl. Conference on System Sciences (HICSS'06) - 2	
Proceedings of the 40th Annual Hawaii Intl. Conference on System Sciences (HICSS'07) - 4	
Proceedings of the 41st Annual Hawaii Intl. Conference on System Sciences (HICSS'08) - 5	
Proceedings of the 42nd Annual Hawaii Intl. Conference on System Sciences (HICSS'09) - 4	

Journals - 50 papers

International Journal of Electronic Government Research (IJEGR)	7
Electronic Government, an International Journal	6
Government Information Quarterly	6
Int. J. of Electronic Governance	5
Transforming Government: People, Process and Policy	5
Electronic Journal of e-Government	4
Information & Management	3
Information Systems Journal	2
Journal of strategic information systems	3
e-Service Journal	2
European Journal of Information Systems	2
Information Polity	2
International Journal of E-Services and Mobile Applications (IJESMA)	1
Journal of Information Technology	1
Journal of the Association for Information Systems	1