E-Government Adoption Research: An Analysis of the Employee Perspective

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ABSTRACT

The study of electronic government is a comparatively recent development, and to date, relatively little is known about levels of maturity and contemporary trends and issues. The aim of this paper is to provide a review of current literature pertaining to electronic government research in order to observe basic trends and highlight promising lines of inquiry. Of an initial search resulting in 448 articles published between 2000-2011, 134 were found to discuss adoption of e-government services from an employee's perspective and included in our study. Results suggest that there is currently a relative lack of theoretical development and rigor in the area, and although many aspects such as *job relevance, security, perceived benefits, anxiety,* and *perceived quality* are clearly significant as far as employee's adoption is concerned, they have not been investigated to their potential, and there remains much opportunity for researchers to shape and develop the field.

Keywords (Required)

E-government, adoption, employees, research trends, meta-analysis, theoretical analysis.

INTRODUCTION

E-government refers to the use of information technology (IT) to advance the proficiency, efficacy, transparency, and responsibility of public governments (Kraemer and King, 2003). Over the past few years, although a growing body of academic literature on e-government has been seen to emerge (Norris and Lloyd, 2006), it appears to be running the risk of not reaching expected levels of maturity (Gronlund, 2005). Despite the considerable influence of e-government systems on public administrations, organizations, individuals, and culture, to date, only a few systematic and complete reviews have been conducted on the subject (Jaeger, 2003; Kraemer and King, 2003). A number of prior studies (Andersen and Henriksen, 2005; Heeks and Bailure, 2007; Yildiz, 2007) have argued that research in this field is weak in terms of theoretical and methodological thoroughness. However, such contentions are yet to be supported by appropriate theoretical evidence. Although some studies have analyzed the development of e-government research through literature analysis, none have yet comprehensively analyzed the theoretical developments of e-government adoption in general, and the employee's adoption of these services in particular. Hence, in order to better understand the use and progression of e-government adoption research, and to at least partially address this issue, we focus in this work on examining developments from the employee perspective, rather than the more commonly investigated citizen-view. Specifically, this study aims to provide a theoretical assessment of such research, focusing on the adoption models frequently employed in such investigations, and resulting in a cumulative view of the independent and dependent constructs derived from the individual studies. The remainder of this paper is therefore structured as follows. In the following Section we provide a discussion of the method employed in our analysis. We then present our findings and a discussion of our results, and finally we present our conclusions and acknowledge the limitations of our approach.

METHODOLOGY

In conducting our study, we searched for relevant papers in an integrated academic database – an approach previously effectively employed by various studies including those profiling research on specific themes. In our study we initially searched for relevant e-government adoption articles using the *ISI Web of Knowledge*® citation indexing and search facilities. We augmented this activity with a comprehensive search using *Google Scholar*® considering various research themes, and using advanced Google Scholar by inputting each year between 2000 and 2011. This electronic search activity was further

augmented by a manual search performed on a number of journals dedicated to publishing e-government research. Out of the resulting total of 448 articles, 134 were found to be focused on employee's adoption and hence included in our study. Of these 134 articles, 77 reported qualitative research, 52 quantitative, and five reported activity belonging to both categories.

RESULTS

Basic Statistics: Sources of Publications

Our analysis of journals publishing e-government adoption research (summarized in Table 1) indicates unsurprisingly that EGIJ (C=68) is a leading source of publications. This is followed by GIQ (C=52), IJEGR (C=44), EGOV (C=32), TGPPP (C=24), and PAR (C=11) as some of the other leading publishing outlets. Further exploration revealed that a total of 146 sources for publication were used to disseminate the overall total of 448 research papers. This analysis indicates that the papers appear across a range of diverse outlets rather than being concentrated in a small number of journals or conferences. A total of 106 outlets have published one article each, 16 have published two articles, and eight have published three articles. Interestingly, leading journals such as MIS Quarterly, Technovation, and the Journal of Information Technology have published only one article each on e-government adoption.

Journal | Source of Publication	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**
Electronic Government, an International Journal (EGIJ)	x	x	x	7	7	9	13	12	14	4	2
Government Information Quarterly (GIQ)	1	1	x	1	6	1	4	5	16	6	12
International Journal of Electronic Government Research (IJEGR)	x	x	x	x	5	7	3	7	11	4	5
EGOV	1	x	1	x	x	2	4	1	3	12	8
Transforming Government: People, Process, and Policy (TGPPP)	x	x	x	x	x	x	5	6	4	4	4
Public Administration Review (PAR)	x	2	x	x	2	1	1	2	x	x	4
Hawaii International Conference on System Sciences	x	x	x	x	1	1	2	2	1	1	1
International Journal of Information Management	x	x	x	2	x	x	x	1	2	2	x
Information Polity	x	x	1	x	x	2	2	x	x	1	x
Computers in Human Behaviour	x	x	x	x	x	x	2	x	1	4	x
ICEGOV	x	x	x	x	x	x	3	1	x	1	x
IFIP-EGOV	x	x	x	x	x	1	x	4	x	x	x
European Journal of Information Systems	x	x	x	x	x	x	2	x	x	x	2
Comparative E-Government, Integrated Series in IS	x	x	x	x	x	x	x	x	x	4	x

Legend: ICEGOV: International Conference of Electronic Government, IFIP-EGOV: International Federation of Information Processing – E-Government

Table 1. Year-Wise Sources of publication (2001-2011)

Basic Statistics: Publications by Year

Analysis of the articles on e-government adoption research published on a year-wise basis between 2000-2011 (illustrated in Table 2) indicated that to date, 2010 was the most productive year for this type of research with largest 94 publications. A complete analysis of material appearing in 2011 was conducted at the time of writing, and although the number of papers published during 2011 was lower than 2010, a more complete analysis would be expected to reveal comparable or greater levels of publication.

Year	#	%	Year	#	%	Year	#	%
2000	1	.2	2004	21	4.7	2008	64	14.3
2001	1	.2	2005	38	8.5	2009	80	17.9
2002	5	1.1	2006	36	8.0	2010	94	21.0
2003	8	1.8	2007	52	11.6	2011	48	10.7
						Total	448	100

Table 2. Year wise distribution of publications

Theoretical Analysis - Theories Used

Theoretical analysis of e-government adoption research from the employees perspective indicates that well-accepted adoption models were used in only 25 instances out of a total of 57 quantitative studies. Analysis of these adoption theories indicates that TAM (C=15) was been used most often, followed by DOI/IDT (C=5), the DeLone and McLean IS Success Model (C=5), UTAUT (C=4), TPB (C=3), and TAM2 (C=3) as other utilized theories or models. Our analysis revealed that although a large number of studies (e.g. Chhabra and Jaiswal, 2008; Kaliannan and Awang, 2010; Lee et al., 2008; Padhi and Mohapatra, 2010; Reddick, 2009) analyzed the e-government adoption from employee's perspective, their selection of constructs to form research models were not linked to specific theories. TAM was considered along with DOI in four studies (Hussein et al., 2011; Karavasilis et al., 2010; Sang et al., 2009; Sang et al., 2010) and TPB in three studies (Fu et al., 2006; Kim and Holzer, 2006; Lu et al., 2010) for developing research models. Although UTAUT is a unified model mapped created from eight established models of IS adoption research including TAM, DOI, and TPB, UTAUT has not been widely used to analyze adoption of e-government services from an employee perspective. A series of other quantitative theories of IS adoption including the Theory of Reasoned Action, decomposed TPB, and the IS success models of Myers et al. (1997) and Seddon (1997), and Social Cognitive Theory were used in only one of the studies we considered and hence are not represented in the Table 3.

Theory	Originating Article(s)	#	Example Studies
TAM	Davis (1989)	15	Dorasamy et al. (2010), Fu et al. (2006), Hu et al. (2011), Hussein et al. (2011), Kim and Holzer (2006), Lu et al. (2010), Sahu and Gupta (2007), Sambasivan et al. (2010), Sang et al. (2009), Sang et al. (2010), Seyal and Pijpers (2004), Vathanophas et al. (2008)
DOI/IDT	Rogers (1995)	5	Hussein et al. (2011), Sang et al. (2009), Sang et al. (2010)
IS Success Model	DeLone and McLean (1992, 2003)	5	Floropolous et al. (2010), Hsu and Chen (2007), Lu et al. (2010)
UTAUT	Venkatesh et al. (2003)	4	Carter et al. (2011), Hu et al. (2011), Sahu and Gupta (2007), Schaupp et al. (2010)
TPB	Ajzen (1991)	3	Fu et al. (2006), Kim and Holzer (2006), Lu et al. (2010)
TAM2	Venkatesh and Davis (2000)	3	Sang et al. (2009), Sang et al. (2010), Seyal and Pijpers (2004)
Legend: #: Number of Studies, DOI: Diffusion of Innovation, DTPB: Decomposed Theory of Planned Behavior, IDT: Innovation Diffusion Theory, IS Success Model: DeLone and McLean's IS Success Model, TAM: Technology Acceptance Model, TAM2: Extended Technology Acceptance Model, TPB: Theory of Planned Behavior, UTAUT: Unified Theory of Acceptance and Use of Technology			

Table 3. Theories Used (Approach from Jeyaraj et al., 2006)

Theoretical Analysis - Constructs and Cumulative Impact

Figure 1 presents a diagrammatic representation of the cumulative impact of the various independent variables on dependent variables along with their significance as derived from the studies considered in our work. Given the large amount of information presented in Figure 1, space limitations clearly preclude detailed discussion of the results. However, we can highlight that our results revealed that *behavioral intention* or *intention to use* was the most widely used dependent variable for this category. In addition, dependent variables such as *perceived usefulness, satisfaction, attitude, perceived ease of use, perceived behavioral control*, and *actual use* were also found to be among the more frequently utilized variables across the studies considered. Constructs such as *perceived ease of use, perceived usefulness*, and *perceived behavioral control* were found to be both regularly used and performed well in use. Constructs, including *perceived risk, trust, compatibility, relative advantage, job relevance, subjective norm, performance expectancy, effort expectancy, social influence*, and *facilitating conditions* were among the most widely used independent constructs.

Table 5 presents the most frequently used independent variables across the studies of e-government adoption research from the employee's perspective that were considered in our investigation. Our findings indicated that *perceived usefulness* (C=15) was the most frequently used independent variable followed by *perceived ease of use* (C=13), *trust* (C=10), *compatibility* (C=6), *self-efficacy* (C=6), *subjective norm* (C=6), *facilitating conditions* (C=5), and *behavioral intention, relative advantage, social influence*, and *image* each with four occurrences as further examples of more frequently used variables. Moreover, seven constructs (*Performance Expectancy, Perceived Behavioral Control, Service Quality, Information Quality, System*

Quality, Perceived Quality, Output Quality) appeared in three studies each. Use of an asterisk (*) in Table 5 indicates that the construct concerned was made use of as both an independent and a dependent variable in various studies.

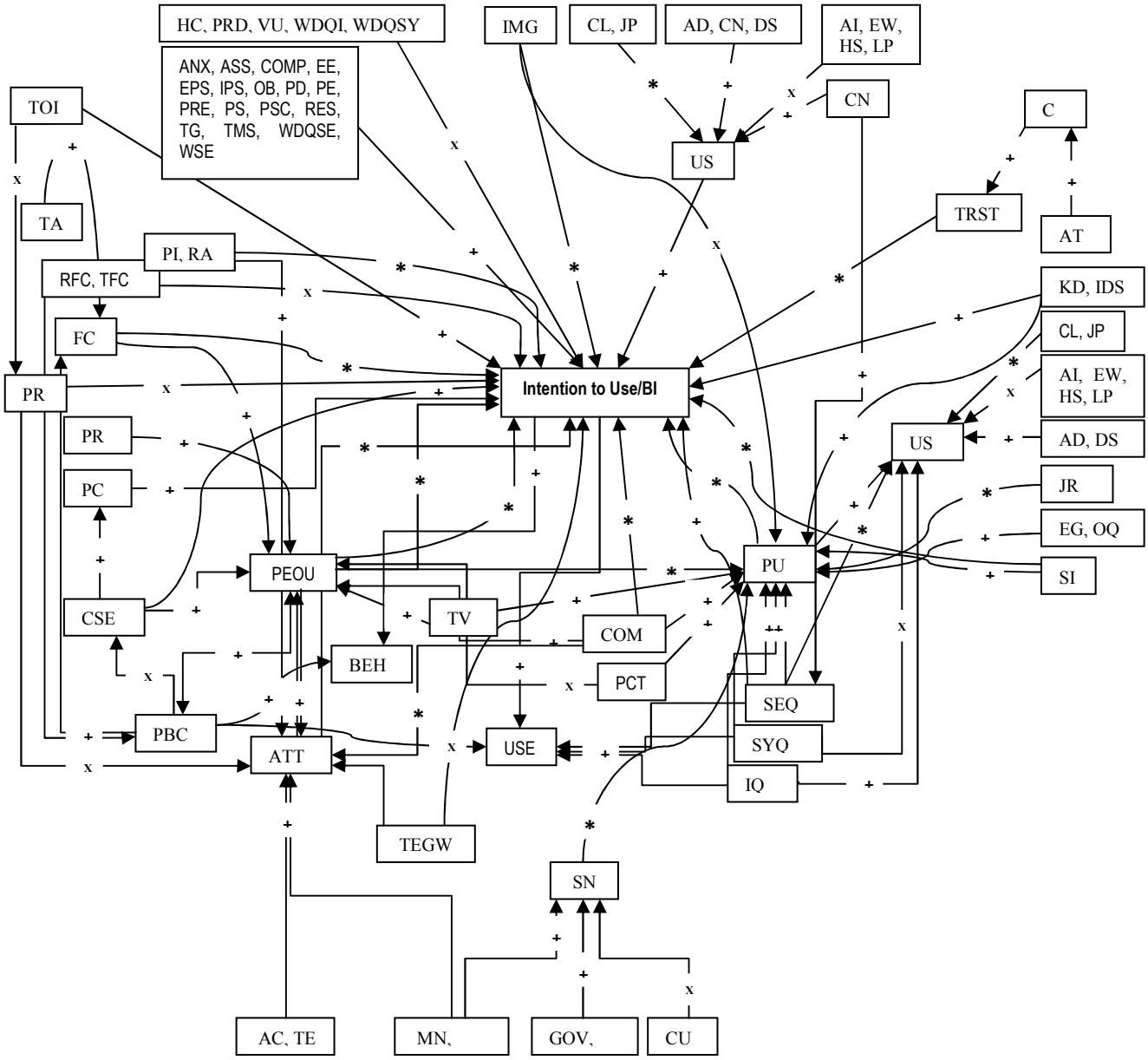

Figure 1. Independent and Dependent Variables - Cumulative Results

[Legend: AC: Accuracy; AD: Adequacy of Description; AI: Adequacy of the amount of Information; ANX: Anxiety; ASS: Assurance; AT: Autonomy; ATT: Attitude; AU: Actual Use; BEH: Behavior; BI: Behavioral Intention; CL: Clarity of Job Sequence; CM: Commitment; CN: Convenience to Life; COM: Compatibility; COMP: Complexity; CSE: Computer Self-Efficacy; CU: Continued Use; CUS: Customer; DS: Display Speed; EE: Effort Expectancy; EG: Efficiency Gain; EPS: External Political Self-Efficacy; EW: Ease of Work; FC: Facilitating Conditions; GOV: Government; HC: Helpline Competency; HS: Help Service; IDS: IS Department Support; IMG: Image; IPS: Internal Political Self-Efficacy; IQ: Information Quality; JP: Job Productivity; JR: Job Relevance; KDD: Knowledge about Digital Democracy; LI: Local Industries; LP: Layout of Pages; MN: Moral Norms; OB: Optimism Bias; OQ: Output Quality; PBC: Perceived Behavioral Control; PC: Perceived Credibility; PCT: PC Training; PD: Performance Dimension; PE: Performance Expectancy; PEOU: Perceived Ease of Use; PI: Personal Innovativeness; PR: Perceived Risk; PRD: Perceived Readiness; PRE: Prior Experience; PS: Perceived Strength of Control; PSC: Perceived Security Control; PU: Perceived Usefulness; RA: Relative Advantage; RES: Responsiveness; RFC: Resource Facilitating Conditions; SEQ: Service Quality; SI: Social Influence; SN: Subjective Norms; SON: Social Norms; SS: Supervisor Support; SYQ: System Quality; TA: Timely Assistance; TE: Tax Equity; TEGW: Trust to E-Government Website; TG: Trust of the

Government; TFC: Technology Facilitating Conditions; TMS: Top Management Support; TOE: Trust of the E-file System; TOI: Trust of the Internet; TRST: Trust; TV: Task Variety; US: User Satisfaction; VU: Voluntariness of Use; WDQI: Web Design Quality (Information); WDQSE: Web Design Quality (Service); WDQSY: Web Design Quality (System); WSE: Web-Specific Self-Efficacy] [Types of Relationship Indicator: +: Significant; x: Non-Significant Relationship; and *: Mixed Relationships]

Independent Variable	#	Example Studies
Perceived Usefulness*	15	Dorasamy et al. (2010), Fu et al. (2006), Hu et al. (2011), Hussein et al. (2010), Hussein et al. (2011), Lu et al. (2010), Sambasivan et al. (2010), Sang et al. (2009), Sang et al. (2010), Seyal and Pijpers (2004), Vathanophas et al. (2008)
Perceived Ease of Use*	13	Fu et al. (2006), Hu et al. (2011), Kim and Holzer (2006), Lu et al. (2010), Sambasivan et al. (2010), Sang et al. (2009), Sang et al. (2010), Seyal and Pijpers (2004), Vathanophas et al. (2008)
Trust*	10	Fu et al. (2006), Hussein et al. (2010), Hussein et al. (2011), Kim and Lee (2006), Sambasivan et al. (2010), Sang et al. (2009), Sang et al. (2010), Schaupp et al. (2010), Vathanophas et al. (2008)
Compatibility	6	Fu et al. (2006), Hussein et al. (2011), Sang et al. (2009)
Self-Efficacy	6	Carter et al. (2011), Fu et al. (2006), Hussein et al. (2010), Sahu and Gupta (2007), Seyal and Pijpers (2004)
Subjective Norm*	6	Fu et al. (2006), Lu et al. (2010), Sang et al. (2010), Vathanophas et al. (2008)
Facilitating Conditions	5	Fu et al. (2006), Hu et al. (2011), Sahu and Gupta (2007), Sambasivan et al. (2010), Schaupp et al. (2010)

Table 5. Most Frequently Used Independent Constructs

Table 6 presents the most frequently used dependent variables across the range of studies of e-government adoption research from the employee's perspective that were considered in our investigation. Our findings indicated that *intention to use* or *behavioral intention* (C=18) was the most frequently used dependent variable, followed by other frequently used variables such as *perceived usefulness* (C=11), *perceived ease of use* (C=5), *attitude* (C=5), *satisfaction* (C=5), *actual use* (C=4), and *perceived risk* (C=3). In addition, a series of additional variables including *perceived behavioral control, service quality, subjective norm, trust,* and *adoption behavior*, were examined in two or less studies and for reasons of space conservation have not been included in Table 6. Surprisingly, our investigation reveals that *trust* has been little investigated as a dependent variable, whereas it is one of the most explored independent variables. As in Table 5, use of an asterisk (*) in Table 6 indicates that the construct concerned was made use of as both an independent and a dependent variable in various studies.

Dependent Variable	#	Example Studies
Intention to Use/BI*	18	Carter et al. (2011), Dorasamy et al. (2010), Fu et al. (2006), Hu et al. (2011), Hussein et al. (2010), Hussein et al. (2011), Kim and Holzer (2006), Lu et al. (2010), Sahu and Gupta (2007), Sambasivan et al. (2010), Sang et al. (2010), Schaupp et al. (2010), Vathanophas et al. (2008)
Perceived Usefulness*	11	Floropoulos et al. (2010), Fu et al. (2006), Hu et al. (2011), Kim and Holzer (2006), Sang et al. (2009), Sang et al. (2010), Seyal and Pijpers (2004), Vathanophas et al. (2008)
Perceived Ease of Use*	5	Fu et al. (2006), Seyal and Pijpers (2004), Vathanophas et al. (2008)
Attitude*	5	Lu et al. (2010), Sahu and Gupta (2007), Seyal and Pijpers (2004)
Satisfaction*	4	Floropoulos et al. (2010), Sun et al. (2006)
Actual Use	4	Hu et al. (2011), Lu et al. (2010)
Perceived Risk*	3	Fu et al. (2006), Schaupp et al. (2010)

Table 6. Most Frequently Used Dependent Constructs

DISCUSSION

Our intention in this paper was to present the results of an analysis of research relating to e-government adoption, specifically that which focuses upon the issue from the employee perspective rather than the commonly investigated citizen-view. Based on a review of 134 suitable papers identified as a result of our *ISI Web of Knowledge*® and *Google Scholar*® search activities,

results were presented in terms of three aspects: basic publication statistics, research theories used, and constructs and cumulative impact.

Our analysis in terms of publication statistics demonstrates that the number of publications has continued to rise since 2000 when only one paper appeared in our search results, and this trend is apparently set to continue. In terms of outlets publishing such research studies, it is unsurprising to find that specialized journals such as EGIJ, GIQ, IJEGR, EGOV and TGPPP appear prominent. However, the low number of articles published by non-specialized leading journals such as MIS Quarterly and the Journal of Information Technology was not expected.

In terms of research theories used, our results indicate that TAM has been the most widely used model. Given that TAM is known to be useful for comparing user groups or applications and assessing technologies or applications within and across organizations (Adams et al., 1992; Subramanian, 1994), and that TAM is useful both to investigate IT acceptance intention behavior and to assist with explaining online users' behavioral issues (Gefen et al., 2003; Horst et al., 2007; Liu and Arnett, 2000; Pavlou, 2003), this again was of no great surprise. However, given the acknowledged limitations of the use of TAM Paul and John (2003), there is clearly scope for additional original work in attempting to address these limitations within the scope of e-government adoption research. Venkatesh et al. (2003) formulated the UTAUT through the mapping of eight well-known acceptance models, including TAM, DOI, and TPB, and the performance of the resulting UTAUT was found to be better than that of any individual contributing model. It is interesting to note that studies which used TPB (Fu et al., 2010; Kim and Holzer, 2006; Lu et al., 2010), DOI (Hussein et al., 2011; Karavasilis et al., 2010; Sang et al., 2009; Sang et al., 2010), or even UTAUT (Hu et al., 2011) along with TAM were researched after the emergence of UTAUT in 2003, and yet none of these works made use of UTAUT as a core model along with additional integrated constructs. This is perhaps as much a reflection on UTAUT use in general as opposed to UTAUT use within e-government adoption research specifically, however further investigative work is required in order to examine the selection and justification procedures of UTAUT contributing models and indeed the extent to which they address the situation under investigation.

Our analysis of the use of independent constructs in employee adoption of e-government services revealed that the majority of the constructs being used are constituent components of regularly used models such as TAM, TPB, DOI, DeLone and McLean IS success model and UTAUT. However, constructs such as *job relevance, privacy, security, perceived benefits, perceived knowledge, assurance, anxiety, perceived quality, income,* and *output quality* - even though they hold a great significance in contributing to analyzing employee adoption behavior for e-government services, they are still largely under-represented and represent a clear opportunity for further research contributions. It is noticeable from our results that few studies (e.g. Hu et al., 2011; Lu et al., 2010) discussed actual use behavior after assessing the intention of using e-government services under investigation. This might be due to the fact that measuring actual use of e-government services can be complication, and it is acknowledged that intention to use is often presented as a proxy for actual use behavior, nevertheless, there remains much scope for research to examine the actual use of services. Similar to the results for independent constructs, although dependent constructs including *behavioral intention, perceived ease of use,* and *perceived usefulness* are among the most frequently examined variables, the legitimacy of the variables such as *trust, self-efficacy, subjective norm, service quality, perceived behavioral control,* and *prior experience* has yet to be properly investigated.

CONCLUSIONS AND LIMITATIONS

Our intention in this paper was to present the results of an analysis of research relating to e-government adoption based on a review of 134 suitable papers published between 2000 and 2011. We presented the results of our investigation in terms of three aspects: basic publication statistics, research theories used, and constructs and cumulative impact. Our intent in conducting our investigation was both to provide a cross-sectional view of work published to date, and a resource for future researchers by providing information on the areas previously addressed in e-government adoption research, how such research tends to be carried out (in terms of theories and models applied), and to an extent, what areas could be usefully approached to conduct further original work. In terms of opportunities for publishing such work, favored outlets appear to be a clear group of specialized journals, there being little presence to date in high-quality general journals - publishing such material in these journals therefore appears to be something for e-government researchers to aspire to. In terms of theories and models, the expected approaches appeared in our dataset, we also identify well known theories that have been little used-for instance the DeLone and McLean IS success model. Our findings also revealed the need for exploring some under-represented independent and dependent variables whose relevance cannot be ignored in the organizational context.

Finally, we acknowledge some limitations of our study. Restricting our analysis to theoretical constructs and their frequency may not provide a full picture of the relevance of the constructs, and their significance has not been measured, nor has any weight analysis been conducted. Further research should address these aspects. The limited number of articles examined in the study is also fully acknowledged.

REFERENCES

1. Adams, D. A., Nelson, R. R. and Todd, P. A. (1992) Perceived usefulness, ease of use and usage of information technology: A replication, *MIS Quarterly*, 16, 2, 227–247.
2. Agarwal, R. and Prasad, J. (1997) The role of innovation characteristics and perceived voluntariness in the acceptance of information technologies, *Decision Sciences*, 28, 3, 557-582.
3. Ajzen, I. (1991) The theory of planned behavior, *Organizational Behavior and Human Decision Processes*, 50, 2, 179-211.
4. Carter, L., Shaupp, L. C., Hobbs, J. and Campbell, R. (2011) The role of security and trust in the adoption of online tax filing, *Transforming Government: People, Process and Policy*, 5, 4, 303-318.
5. Chemers, M. (1997) *An integrative theory of leadership*, Lawrence Erlbaum Associates, Publishers. ISBN 9780805826791.
6. Chhabra, S. and Jaiswal, M. (2008) E-Government Organizational Performance Framework: Case Study of Haryana State in India - A Log Linear Regression Analysis. *International Journal of Electronic Government Research*, 4, 3, 57-80.
7. Davis, F. D. (1989) Perceived usefulness, perceived ease of use, and user acceptance of information technology, *MIS Quarterly*, 13, 3, 319-340.
8. DeLone, W. H. and McLean, E. R. (1992) Information systems success: The quest for the dependent variable, *Information Systems Research*, 3, 1, 60-95.
9. DeLone, W. H. and McLean, E. R. (2003) The DeLone and McLean Model of information systems success: A ten year update, *Journal of Management Information Systems*, 19, 4, 9-30.
10. Dorasamy, M., Marimuthu, M., Raman, M. and Kaliannan, M. (2010) E-Government Services Online: An Exploratory Study on Tax E-Filing in Malaysia, *International Journal of Electronic Government Research*, 6, 4, 12-24.
11. Dwivedi, Y. K. and Kuljis, J. (2008) Profile of IS research published in the European Journal of Information Systems, *European Journal of Information Systems,* 17, 678-693.
12. Floropoulos, J., Spathis, C., Halvatzis, D. and Tsipouridou, M. (2010) Measuring the success of the Greek Taxation Information System, *International Journal of Information Management*, 30, 47-56.
13. Freeman, R. E. (1984) *Strategic Management: A stakeholder approach*. Boston: Pitman. ISBN 0273019139.
14. Fu, J-R., Chao, W-P. and Farn, C-K. (2006) Acceptance of electronic tax filing: A study of taxpayer intentions, *Information & Management*, 43, 109-126.
15. Gefen D, Karahanna E. and Straub, D. (2003) Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27, 1, 51-90.
16. Gronlund, A. (2005) State of the art in e-government research: Surveying conference publications, *International Journal of Electronic Government Research*, 1, 4, 1-25.
17. Heeks, R. and Bailure, S. (2007) Analysing e-government research: Perspectives, philosophies, theories, methods, and practice, *Government Information Quarterly*, 24, 243-265.
18. Horst M., Kuttschreuter M. and Gutteling J. M. (2007) Perceived usefulness, personal experiences, risk perception and trust as determinants of adoption of e-government services in The Netherlands, *Computer Human Behavior*, 23, 4, 1838-1852.
19. Hu, P.J-H., Chen, H., Hu, H-F., Larson, C. and Butierez, C. (2011) Law enforcement officers' acceptance of advanced e-government technology: A survey study of COPLINK Mobile, *Electronic Commerce Research and Applications*, 10, 6-16.
20. Hussein, R., Mohamed, N., Ahlan, A. R. and Mahmud, M. (2011) E-government application: An integrated model on G2C adoption of online tax, *Transforming Government: People, Process and Policy*, 5, 3, 225-248.
21. Hussein, R., Mohamed, N., Ahlan, A.R., Mahmud, M. and Aditiawarman, U. (2010) G2C Adoption of E-Government in Malaysia: Trust, Perceived Risk and Political Self-Efficacy. *International Journal of Electronic Government Research*, 6, 3, 57-72.
22. Jaeger, P. T. (2003) The endless wire: E-government as global phenomenon, *Government Information Quarterly*, 20, 323-331.

23. Jeyaraj, A., Rottman, J. W. and Lacity, M. C. (2006) A review of the predictors, linkages, and biases in IT innovation adoption research, *Journal of Information Technology*, 21, 1-23.
24. Kaliannan, M. and Awang, H. (2010) Adoption and Use of E-Government Services: A Case Study on E-Procurement in Malaysia, *WSEAS Transactions on Business and Economics*, 1, 1-10.
25. Kim, C-G. and Holzer, M. (2006) Public Administrators' Acceptance of the Practice of Digital Democracy: A Model Explaining the Utilization of Online Policy Forums in South Korea, *International Journal of Electronic Government Research*, 2, 2, 22-48.
26. Kraemer, K. L. and King, J. L. (2003) Information Technology and Administrative Reform: Will the Time After EGovernment Be Different? *Paper presented at the Heinrich Reinermann Schrift fest*, Post Graduate School of Administration, Speyer, Germany.
27. Lee, K. C., Kirlidog, M., Lee, S. and Lim, G. G. (2008) User evaluations of tax filing web sites: A comparative study of South Korea and Turkey, *Online Information Review*, 32, 6, 842-859.
28. Liu C. and Arnett, K. P. (2000) Exploring the factors associated with web site success in the context of electronic commerce, *Information & Management*, 38, 1, 23-33.
29. Lu, C-T., Huang, S-Y. and Lo, P-Y. (2010) An empirical study of on-line tax filing acceptance model: Integrating TAM and TPB, *African Journal of Business Management*, 4, 5, 800-810.
30. Mamadouh, V. (1999) Grid-Group Cultural Theory: An introduction. *GeoJournal*, 47, 395-409.
31. Moore, G. C. and Benbasat, I. (1991) Development of an instrument to measure the perceptions of adopting an information technology innovation, *Information System Research*, 2, 3, 192-222.
32. Myers, B. L., Kappelman, L. A. and Prybutok, V. R. (1997) A comprehensive model for assessing quality and productivity of the information systems function: Toward a theory for information systems assessment, *Information Resources Management Journal*, 6-25.
33. Padhi, S. S. and Mohapatra, P. K. J. (2010) Adoption of e-procurement in the government departments, *Electronic Government, an International Journal*, 7, 1, 41-59.
34. Paul, L. and John, I. (2003) Why do people use information technology? A critical review of the technology acceptance model, *Information & Management,* 40, 3, 191-204.
35. Pavlou, P. A. (2003) Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model, International Journal of Electronic Commerce, 7, 3, 101-134.
36. Reddick, C. G. (2009) Factors that Explain the Perceived Effectiveness of E-Government: A Survey of United States City Government Information Technology Directors, *International Journal of Electronic Government Research*, 5, 2, 1-15.
37. Rogers, E. (1995) *Diffusion of Innovations*, The Free Press, New York, USA.
38. Sahu, G. P. and Gupta, M. P. (2007) Users' Acceptance of E-Government: A study of Indian central Excise, *International Journal of Electronic Government Research*, 3, 3, 1-21.
39. Sambasivan, M., Wemyss, G. P. and Rose, R. C. (2010) User acceptance of a G2B system: A case of electronic procurement system in Malaysia, *Internet Research*, 20, 2, 169-187.
40. Sang, S., Lee, J. D. and Lee, J. (2010) E-government adoption in Cambodia: a partial least squares approach, *Transforming Government: People, Process, and Policy*, 4, 2, 138-157.
41. Sang, S., Lee, J-D. and Lee, J. (2009) E-government adoption in ASEAN: the case of Cambodia, *Internet Research*, 19, 5, 517-534.
42. Schaupp, L. C. and Carter, L. (2010) The impact of trust, risk and optimism bias on e-file adoption, *Information System Frontier*, 12, 299-309.
43. Seddon, P. B. (1997) A re-specification and extension of the DeLone and McLean model of IS success, *Information Systems Research*, 8, 3, 240-253.
44. Seyal, A. H. and Pijpers, G. G. M. (2004) Senior government executives' use of the internet: A Bruneian scenario, *Behaviour & Information Technology*, 23, 3, 197-210.
45. Subramanian, G. H. (1994) A replication of perceived usefulness and perceived ease-of-use measurement, *Decision Science*, 25, 5-6, 863-874.

46. Vathanophas, V., Krittayaphongphun, N. and Klomsiri, C. (2008) Technology acceptance toward e-government initiative in Royal Thai Navy, *Transforming Government: People, Process, and Policy*, 2, 4, 256-282.
47. Venkatesh, V. and Davis, F. D. (2000) A theoretical extension of the technology acceptance model: Four longitudinal field studies, *Management Science*, 46(2), 186-204.
48. Venkatesh, V., Morris, M. G., Davis, G. B. and Davis, F. D. (2003) User acceptance of information technology: Toward a unified view, *MIS Quarterly*, 27(3), 425-478.
49. Yildiz, M. (2007) E-Government research: Reviewing the literature, limitations, and ways forward, *Government Information Quarterly*, 24, 646-665.