International Business Management 10 (3): 292-300, 2016
ISSN: 1993-5250

The Potential Advantages of Implementing e-Government as well as Factors on Such Adoption

Salem A.S. AL-Rahimy
Faculty of Administrative and Financial Sciences,
Irbid National University, Al-Aghwar Shamaliyyeh, Jordan

Abstract: This study examined various countries' efforts in adopting and implementing e-Government initiatives concerning their 24/7 business. The study also focused on examining the literature related to the adoption and diffusion of information system. In addition, this study reviewed the e-Government concepts in informative society and specially focused on the government adoption in Asia. These factors investigated some of the strategic and technical challenges and risk factors that affected the development of e-Government. Moreover, this study offered some suggestions to overwhelm the consequences of this difficulties. Some of these factors must be identified correctly and considered their risk factors as they controlled the success or failure of the adoption of the e-Government.

Key words: e-Government, adoption of innovations, e-Business, businesses, models, developing countries literature review, e-Commerce

INTRODUCTION

The revolution in Information Communication Technologies (ICT) has resulted in changes in many aspects of people's daily lives around the world. This revolution has also changed the way governments around the globe interact with their citizens, businesses, agencies, employees and other stakeholders (Lee, 2010; Rokhman, 2011). These changes and development have promoted the adoption of electronic government or e-Government (Raus *et al*., 2010; Elsheikh *et al*., 2008). The revolution in ICT has raised the attention among researchers and the information system practitioners worldwide. The field of e-Government has become an important subject around the globe (Siau and Long, 2006; Chen *et al*., 2006).

In order to reduce the technological gap between developing and developed countries, many developing countries including Jordan have launched several e-Initiatives such as e-Government (Siau and Long, 2006). The Jordanian government realized the benefits of e-Government as it is a pervasive global phenomenon in both industrialized and developing nations. Jordan implemented e-Government initiative in year 2006 with the aim of transforming the country to e-Jordan (Ciborra and Navarra, 2005). Various programs have been implemented to promote the adoption of e-Government, especially among businesses. However, little knowledge is available of e-Government adoption model for businesses in Jordan.

In the globalization era, understanding the adoption of ICT including e-Government by developing countries is becoming important to improve its adoption success (Shareef *et al*., 2011). Among others, this will enable developed countries to trade with developing countries more efficiently. At this stage, there are only a limited number of studies on the adoption of e-Government by developing countries (Shareef *et al*., 2011).

Pudjianto and Hangjung and Almarabeh and AbuAli found that not all e-Government implementation is accomplished successfully. Approximately, 60% of the e-Government implementation fails or cannot reach the expected outcomes. Heeks (2002) observed and analyzed >40 e-Government development projects in developing countries and found that around 35% from these projects totally failed while 50% partially failed and only 15% were successful. This figure gives an indication that the failure rate in developing countries is high and becomes more risky compared to developed countries. This phenomenon is the motivation for our exploratory research on e-Government.

Kanat and Ozkan (2009) attributed the reasons of the failure of e-Government development to infrastructural issues, social and cultural issues, usefulness, accessibility, lack of trust, lack of understanding of citizen and business needs, lack of confidentiality and lack of marketing. This finding is in line with the previous works in e-Government adoption literature which already highlighted these reasons under such titles as 'ICT Divide or Digital Divide' (Carter, 2008),

'Risk and Trust' (Gefen *et al*., 2003; Belanger and Hiller, 2006), 'Cultural and Social Issues', 'Organization Culture' as factors influencing adoption.

It is imperative to bear in mind that the most important issue is not the classification of the reasons for failure into different categories but to understand the potential failings, thereby being more equipped to deal with such problems if they were to arise (Dada, 2006). Hence, there is a need for further study to narrow the knowledge gap that exists (due to the scarcity of studies in the field of e-Government adoption and implementation) which are important prerequisites of e-Government success. Several researchers have suggested further study to be conducted in this area to avoid failures of e-Government initiatives (Kanat and Ozkan, 2009; OECD, 2003; Zhao *et al*., 2008; Omari and Omari, 2006).

As pointed out by Wood-Harper, investigating the factors that contribute to the success of e-Government services is needed as many countries continue to face challenges in implementing e-Government. In addition, Tung and Rieck (2005) emphasized that by being aware of the factors that influence businesses' use of e-Government services, strategies can be adopted to reduce some of the inherent barriers of e-Government uptake. Knowledge gained from better understanding of the current status of e-Government adoption among developing countries businesses will help in the development of appropriate measures and incentives by the authorities to encourage e-Government adoption among businesses. In general, the purpose of this studyis to explore and investigate the factors that drive the adoption of e-Government organizational performance and the current status of the e-Government adoption among businesses in developing countries (Alawneh and Hattab, 2009).

The findings of this study will help to contribute to the knowledge on the practices of G2B e-Government in the Asian region and specifically for firms in Jordan. By understanding firms' e-Government adoption and the factors associated with the usage and the reasons behind the rejection of e-Government applications, appropriate measures and incentives can be drafted to encourage e-Government adoption among businesses. In general, the purpose of this study is to explore and investigate the factors that drive the adoption of e-Government, organizational performance and the current status of the e-Government adoption among businesses in developing countries.

EMPIRICAL FINDINGS AND LIMITATIONS OF E-GOVERNMENT ADOPTION STUDIES

e-Government empirical studies often differ in their findings in the literature. Accordingly, lack of generalizability is frequently cited as one of the limitations in some empirical studies (Horst *et al*., 2007; Fu *et al*., 2006). For example, Deursen concluded that despite the similarities in Dutch and Scandinavian culture, welfare state and political system, the usage of e-Government vastly differs in these countries.

The early adoption of ICT and higher levels of awareness about the use of technology helped to promote e-Government success in developed nations. In comparison, businesses in developing countries are far behind in the adoption of ICT. In Jordan for example, e-Government research is in its early stages (Elsheikh *et al*., 2008) and the level of ICT change that would be offered to Jordan will be huge. As a result, the country can hardly afford to be left behind in harnessing the benefits of implementing e-Government.

There are a number of empirical studies undertaken in different countries to study e-Government adoption. For example, Jordan (Ibrahim and Abdullah, 2006); United States (Norris and Moon, 2005); Germany; Britain (Li, 2003) and South Africa (Wong and Welch, 2004). Each study contributes in providing a strong theoretical understanding of the factors explored in the research model. Table 1 discusses the potential advantages of implementing e-Government as well as factors on such adoption. These studies are conceptual, descriptive and exploratory in nature. However, the findings failed to provide relevant facts regarding the current state of e-Government across different countries and sectors. This study attempt to highlight the gaps in the literature that would have implications for future research in a developing country such as Jordan to provide better understanding of business beliefs and organizational characteristics of governments that could affect adoption of ICT technologies and e-Services by businesses in Jordan.

A study conducted by Aboelmaged (2010), investigated the effects of TAM and TPB variables on the intention of e-Procurement adoption in the United Arab Emirates (UAE). The factors examined including ease of use, attitude, usefulness, subjective norm and behavioral control. The findings show that the proposed model has a good explanatory power and confirms its robustness with a reasonably strong empirical support in predicting users' intention to use e-Procurement technology.

However, a study showed that recognition selection bias could be a problem because only inactive e-Procurement users were used in the data collection process (Aboelmaged, 2010). Hence, future studies should consider the collection of data from experienced people such as procurement managers. This will remedy the bias and help researchers to better understand e-Procurement adoption. In addition, the study was based on TAM Model whereas several researchers argued that

Table 1: Empirical findings and limitations of e-Government adoption studies

Researchers	Findings related to e-Government adoption	Direction for future research	Segment market
Tung and Rieck (2005)	Significant relationship between perceived benefits, external pressure and social influence and the firms' decision to adopt e-Government services	Investigate the adoption decision according to industries. Organizations from different industries face different operating conditions and may possess different requirements	Businesses (Singapore)
Zhao *et al.* (2008)	Majority of the state G2B sites included the user-interface characteristics that provided online users with positive experiences when visiting the sites	Investigate to what degrees the state G2B sites help strengthen their state economic competitiveness and growth	Businesses (USA)
Awan (2007)	e-Government sectors significantly affect the digital economy; G2B has major implications beyond G2C	Attempt to examine the extent to which different industries deal with the government online	Businesses (Dubai)
Ramdani *et al.* (2009)	The results indicate that firms with a greater perceived relative advantage, a greater ability to experiment with these systems before adoption, greater top management support and organizational readiness are predicted to become adopters of e-Procurement	The limitations of this study are focused on a limited geographical area, on three industries only, on the pre-adoption phase of enterprise systems innovation/diffusion process	Businesses (UK)
Rorissa and Demissie (2010)	The rate of adoption is slow due to several factors. Some of these include infrastructure, literacy, economic development and culture	Researchers suggest more research on e-Government services to improve implementation of Government to Business (G2B)	Citizens (Africa)
Dada (2006)	The major problem is seen to be the gaps that exist between the design and the reality of the system. The topic of e-Government is still quite new and perspectives are quite likely to change over time	There is scope for further research in both the areas of success and failure of e-Government in developing countries and undoubtedly as more real-world cases come forth, so will new interpretation	Literature review (Developing countries)
Akman *et al.* (2005)	Gender difference is huge in turkey in relation to e-Government adoption	Culture and communication styles need to be explored	Citizens (Turkey)
Al-Fakhri *et al.* (2008)	The Saudis should consider several reforms, chief among which include the following: increasing the awareness of its e-Government program	A future study could look at the major risks of e-Government adoption and recommend some suggestions to avoid those risks	Employees (Saudi Arabia)
Andersen and Henriksen (2006)	Benefits of digitalization of core e-Government activities from end-users perspective	Research required to understand the driving forces for progression from one stage to another	Citizens (Denmark)
Al-Shafi and Weerakkody (2008)	The e-Government services initiative in qatar has been successful initially in promoting wider access to the internet	Future research can focus on extending this study to other gulf countries	Citizens (Qatar)
Barnes and Vidgen (2002)	Significant differences in perception regarding; usability, design, information, trust and empathy	Suggests the threat of internal validity can be overcome by triangulation techniques	Citizens (UK)
Lean *et al.* (2009)	There are significant positive relationship with citizens' intention toward using e-Government services and trust and perceived usefulness	To expand the scope of research to whole malaysia in order to better understand the role, doi and uncertainty avoidance (culture effect) as a whole	Citizens (Malaysia)
Carter and Belanger (2005)	PEOU, compatibility and trustworthiness are significant indicators for adoption	Future studies should include a broader set of government agencies.	Citizens (USA)
Ibrahim and Abdullah (2006)	Knowledge sharing especially in e-Government can overcome cultural barriers or attitude of staff	Recommended the need to the importance of attending to the design of web pages and provides the required services on the page in full	Citizens (Jordan)
Choudrie *et al.* (2005)	Lack of accessibility and usability affect e-Government adoption	Longitudinal research is essential to understand barriers of e-Government in UK	Citizens (UK)
Dimitrova and Chen (2006)	Non-demographic characteristics are equally important	Research in 'civic mindedness' and differentiation of 'social networks' is essential	Citizens (USA)
Dossani *et al.* (2005)	Strong infrastructure and partnership with non-governmental organizations required	Research in strategic needs of stake holders	Citizens (India)
Fu *et al.* (2006)	PU and PEOU significantly affect adoption	Research in influence of pu and compatibility in other services	Citizens (Singapore)
Gilbert *et al.* (2004)	Factors influencing barriers of adoption	Research in service quality attributes (e.g., reliability, control, enjoyment)	Citizens (UK)
Gupta and Jana (2003)	Tangible and intangible benefits of e-Government implementation	Qualitative analysis of the benefits of e-Government are subjective in nature	Citizens (India)
Horst *et al.* (2007)	PU of e-Government, PBC and worry about e-Government' are insignificant	Research with different sample is suggested	Citizens (Netherlands)
Pilling and Boeltzig (2007)	Systematic barriers of adoption	Research on strategies to overcome digital barriers	Citizens (USA and UK)
Schaupp and Carter (2005)	PEOU, image and relative advantage does not directly affect intention to use e-Voting	Demographics of the sample is restricted	Citizens (USA)

extending TAM Model to include other variables such as organization culture and top management support is very important (Aboelmaged, 2010).

A study conducted by Ramdani *et al.* (2009) used TOE framework to examine the influence of technological factors (relative advantage, compatibility, complexity, trialability and observability), organizational factors (top management support, organizational readiness is experience, organizational size and industry sector) and environmental factors (competitive pressure, external IS support and market scope) to examines the adoption of enterprise systems (ERP, CRM, SCM and e-Procurement)

among Small and Medium Enterprises (SMEs) located in the Northwest of England. Several factors were found to be significant in influencing enterprise system's adoption in SMEs' such as relative advantage, trialability, top management support, organizational readiness and size. Surprisingly, environmental factors were found to be insignificant.

This result contradicts the findings of a recent study by Buonanno which emphasized that the decision process regarding the adoption of ERP Systems within SMEs is more affected by exogenous reasons than business-related factors. However, it is consistent with the findings of a study by Lee (2010) who suggested that SMEs decisions are based on internal factors. As such is innovations are highly differentiated technologies for which there is no single adoption model that could solely be used. According to Ramdani *et al.* (2009), the limitations of this study are focusing on a limited geographical area on three industries only and on the pre-adoption phase of enterprise system's innovation/diffusion process. As such, future research can focus on extending this study to another geographical area. It would be interesting to look at the issues under consideration in a comparative perspective (e.g., a large geographical area, more types of businesses).

A study conducted by Lippert and Govindarajulu (2006) examined TOE antecedents to web service's adoption which indicated important variables of technological factors (security concerns; reliability; deployability), organizational factors (firm size; firm scope; technological knowledge; perceived benefits) and environmental factors (competitive pressure; regulatory influence; dependent partner readiness; trust in the web service provider).

The model presented in Lippert and Govindarajulu (2006)'s study offers eleven propositions based on Tornatzky and Fleischer TOE framework which help to explain the organizational contexts which a firm adopts and implements an innovation. Ten positive relationships and one negative relationship were proposed addressing technological, organizational and environmental issues related to web service's adoption. As adoption behavior is a significant component of organizational effectiveness; better understanding of its determinants will improve overall organizational performance. Hence, these factors deserve further investigation in future research.

Another study was conducted by Thong (1999) using TOE framework to examine CEO characteristics' (CEO's innovativeness and IS knowledge), technological factors' (relative advantage, compatibility and complexity), organizational factors' (business size, employees' IS knowledge) and environmental factors' (competitive pressure) influence on business innovation adoption. The findings showed that small businesses with certain CEO characteristics (top management and level of IS knowledge), technological factors (relative advantage, compatibility and complexity of IS) and organizational factors (business size and level of employees' IS knowledge) are more likely to adopt IS.

While CEO and innovation characteristics are important determinants of the decision to adopt, they do not affect the extent of IS adoption. The extent of IS adoption is mainly determined by organizational factors. Finally, the environmental factor of competition pressure has no direct effect on small business adoption of IS.

However, Thong (1999)'s study did not include other variables that may be potential determinants of e-Government adoption in businesses including other factors of innovation such as security, IT infrastructure, government pressure, business nature, organization culture, top management support and financial recourse. In case of innovation adoption among business organizations, factors such as IT infrastructure and government pressure are very important in impacting the adoption decision which was not included in Thong (1999)'s study. Hence, there is a need to investigate such factors in another context such as e-Government adoption.

Premkumar and Roberts (1999) examined the adoption of new information technologies in rural businesses in the US. Their aim was to identify the usage of various communication technologies and the factors that influenced the adoption of these technologies. It described the impact of TOE factors on adoption of IT in businesses.

The results indicated that relative advantage, compatibility, top management support, organizational size, external pressure and competitive pressure are important determinants of adoption. In addition, complexity, cost, IT expertise and vertical linkages are not determinants of adoption.

However, this study focused on the ICTs adoption among business in general and did not consider the impacts of such adoption on the business firm's performance. Furthermore, this study was conducted in USA. There is a need to investigate business firm's adoption of ICT in general and e-Government service in particular in the developing countries.

Similarly, OECD (2003) examined several countries' experiences in implementing e-Government including Denmark, Canada, Australia, Mexico, Germany and the US. This study compared and evaluated the differences of implementing e-Government among these selected OECD countries. In addition, they focused on the obstacles and challenges that should be overcome in order for e-Governments to develop.

The findings showed that the most important challenges facing governments today and in the future include lack of funds, overall costs, lack of accountability, shortage of skills and difficulties of monitoring and evaluating e-Government programs.

While the OECD (2003) focused on the OECD countries, Heeks (2002) examined the success and failure rates of e-Government in developing or transitional countries. Results showed that 85% of e-Government initiatives face a total or partial failure and only 15% are successful. Heeks (2002) provided potential reasons for such failure by highlighting the problem that often arises in developing countries which is the mismatch between the current and future systems due to the large gap in the economic, cultural, physical and various other contexts between the software designers and the place it is being implemented. The model led Heeks (2002) to identify archetype situations where design reality gaps are common. These are summarized:

- Hard-soft gaps: the difference between the actual technology (hard) and the social context (people, culture, politics, etc.) in which it operates (soft)
- Private-public gaps: the difference between the private and public sectors means of a system that works in one sector often does not work in the other
- Country context gaps: the gap that exists when trying to use the e-Government systems for both developed and developing countries

The above statements show that there is scope for further research in both the areas of failure and success of e-Government in developing countries and undoubtedly as more real-world cases come forth, so will new interpretations.

It is argued that businesses' adoption of e-Government should be subject to similar factors of business adoption of e-Commerce (Warkentin *et al*., 2002). Therefore, considering the similarities between e-Commerce and e-Government, selected empirical evidence are taken from the e-Commerce literature to deliberate in the present study. There are also many similarities between e-Commerce and e-Government and as previous research has found, factors from TAM, DOI and TOE Models play a role in user acceptance of e-Commerce (Moon and Kim, 2001; Gefen *et al*., 2003; Pavlou, 2003). Other researchers also found it to be significant in influencing business's adoption of e-Government (Warkentin *et al*., 2002; Carter and Belanger, 2005).

For example, Sutanonpaiboon and Pearson (2006) examined the factors that influence e-Commerce adoption among business organizations in Thailand from the managers' perspectives. These factors were organizational readiness, perceived usefulness, perceived ease of use, entrepreneurial orientation and external factors (competitive pressure and government pressure). The results showed that the major reason behind the non-adoption of e-Commerce is that the organization is not ready to make that change because of cultural, technological, financial and/or logistical reasons. In addition, organizational readiness strongly influences e-Commerce implementation; top management, financial resources, logistical and technological factors are key determinants if businesses in developing countries wish to implement e-Commerce.

However, Sutanonpaiboon and Pearson (2006) argued that their results may not be generalizable in developed or developing countries because all studies have some limitations. Though, Sutanonpaiboon and Pearson (2006) included important variables such as competitive and government pressure, they did not take into consideration other important variables such as organizational culture, business nature, IT infrastructure, organizational views on technology adoption or government's role in supporting technology implementation. As such, the present study considers most of these variables in order to examine the business organization adoption of e-Government service in Jordan.

Al-Qirim examined the factors influencing adoption and diffusion of e-Commerce in developing countries to streamline its business processes and information flow to businesses in Jordan and other international businesses interested in order to invest in Jordan. As result, positive relationships were revealed between innovation adoption and relative advantage, compatibility, image, top management support, size and resources, quality of IS and competition. In addition, negative relationships were found between innovation adoption and complexity, trialability, observability, cost, user involvement, product champion, suppliers, buyers and technology vendors. Al-Qirim highlighted different drivers and impediments to the adoption decision of e-Commerce in one non-governmental organizations (Jordan House of Commerce) in Jordan.

However, the study was an exploratory focus on issues surrounding e-Commerce adoption and success in one non-governmental organization in Jordan. Organizational factors such as perceived benefit, security, IT infrastructure, government pressure, business nature, organization culture, top management support, financial recourse and examining their impact on the adoption decision process were not the focus in this study. Hence, these factors are proposed for future research areas in Jordanian organizations such as the ASE.

Limited studies were conducted to investigate e-Government in Jordan or the rest of the Arab world. One of these studies was conducted by Mofleh and Wanous who examined factors influencing citizens' adoption of e-Government services. It was found that variables such as trust of the internet and government, compatibility, awareness and previous experience are determinants of citizen's adoption of e-Government. The study identified variables that will increase citizens' demand for e-Government services. The study also highlighted the different need of Jordanian society's e-Government products and services based on population segments. However, that study only focused on success factors in implementing e-Government in Jordan among citizens and business's adoption of e-Government.

Using TOE framework, Alawneh and Hattab (2009), examined the influence of technological factors (technology readiness), organizational factors (firm size, financial resources, IT strategy, online revenues, IT professionals) and environmental factors (competition intensity, regulatory support environment) on the value of e-Business adoption using a survey sample of 140 employees from seven banks. Several key factors were found to have significant influence in e-Business adoption in banks namely technology readiness, financial resources, IT strategy, competition intensity and regulatory support environment.

In their study, they discussed an interesting but not entirely adopted and applied topic; value creation in e-Business. According to Alawneh and Hattab (2009), empirical studies on e-Business or e-Government ventures and application's adoptions among business organizations are rare in Jordan. Researchers stated that:

> As far as we know, this study is one of the first in Jordan that has attempted to evaluate the value of adopting e-Business in banking services industry

The statement has provided evidence that research in e-Government adoption among business in Jordan is limited. In particular, there is a lack of academic research focusing on performance and status of e-Government adoption among businesses in Jordan.

Al-Shafi and Weerakkody (2008) examined the adoption of e-Government services in the state of Qatar. They examined the influence of performance expectancy, effort expectancy and social influence on the intention to use e-Government to develop a research model. The results showed that e-Government services initiative in Qatar has been successful in promoting wider access to the internet. As a result, the adoption factors such as performance expectancy, effort expectancy and social influence had a significant impact on intention to use the Qatari e-Government services. Researcher suggested extending similar initiatives to other Arab countries including Jordan as well as different sectors.

Awan examined the use of Dubai e-Government websites by businesses from various industry sectors. The aim was to examine the usability, services quality, communication, security and content provided by Dubai e-Government website. The results showed that service quality such as responses to businesses' queries made online or via e-Mail are not rapid enough.

While both e-Government sectors significantly affect the digital economy, G2B has major implications beyond G2C. However, Awan did not focus on types of industry and usage of government. In addition, what factors drive the managers to adopt e-Government were not examined.

Zhao *et al.* (2008) examined user-interface characteristics and effectiveness of the e-Government to Business (G2B) sites from 50 states in the US and functional capacity of each G2B service of four evolutional current status of a web site. The study examined sophistication and functionality of these websites, namely informational activities allowing users to get information only; interactive use that enables users to get or search for information as well as download forms and send email; transactional activities allowing users to do business online such as filing tax documents, renewing licenses and bidding contracts and intelligent activities enabling users to create accounts and to personalize the site contents and services.

The results showed that majority of the G2B sites included the user-interface characteristics that provided online users with positive experiences when visiting the sites. However, the study identified some weaknesses (e.g., lack of online transaction capacity and lack of other important e-Services) that caused negative experience to online users.

However, the study ignored the impact of e-Government adoption on the firm's performance. As a result, future research needs to focus on G2B adoption which helps strengthen the organization's competitiveness and growth from the manager's perspectives. In addition, the antecedent factors of G2B adoption were not investigated. As hence, future studies need to investigate the antecedents of e-Government adoption among business organizations as well as the influence of such adoption on the organizations' performance.

Tung and Rieck (2005) examined the adoption of e-Government services among business organizations in Singapore. They have investigated the technological factor (perceived benefits), organizational factors

Table 2: Review of e-Government research focused on G2G

Study	Topic of analysis (perspective)	Findings
Christopher (2005)	Models of e-Government growth (G2G)	Empirical examination of e-Government adoption stages within local governments. Privacy and security issues limit e-Government growth
Abanumy *et al.* (2003)	Evaluating e-Government web sites (G2G)	The four stages model of e-Government development is a useful way of evaluating the websites of e-Government
Ebrahim *et al.* (2003)	Stages of e-Government development (G2G)	Compare different adoption models
Ezz (2003)	e-Government adoption (G2G)	Strategic and managerial issues should be solved first before implementing e-Government
Ghaziri (2003)	Requirements of building e-Government (G2G)	Leadership, ICT readiness and human capital are requirements of e-Government initiatives
Holden *et al.* (2003)	Government adoption of e-Government (G2G)	Barriers of e-Government adoption
Lau (2003)	Challenges of e-Government development (G2G)	There are more than technical barriers to e-Government such as citizen's trust, level of internet access and legislative barriers
Li (2003)	Managing e-Government (G-G)	Recommendations on solving strategic management issues when implementing e-Government
Melitski (2003)	Managing e-Government (G2G)	Develop a model for e-Government implementation and give insight from a managerial position
Prattipati (2003)	Difference between countries in the use of e-Government (G2G)	Countries with heavy usage of e-Government have high GDP, better internet access, more competitive ICT environment and spend more on ICT
Davidrajuh (2004)	Planning for e-Government (G2G)	Analyzing implementation strategies of e-Government initiatives

(management readiness and sensitivity to cost) and inter-organizational external pressure (such as government and industry) and social influence.

The findings showed that there is a significant relationship between perceived benefits, external pressure and social influence and firms' decision to adopt e-Government services. Tung and Rieck (2005) asserted that governments need to increase public awareness of the direct and indirect benefits of their e-Services to portray e-Services as up-to-date, effective and secure and to put in place various incentives to encourage their adoption. Researchers also posited that: due to the low response rate, it was not feasible to conduct an analysis of the adoption decision according to industry. It implies that some businesses are more volatile than others or tend to have a higher need for the use of e-Government services in their business activities.

Table 1 provides a summary of past studies that focused on e-Government among citizens while lack of studies of e-Government adoption is presented among businesses. In addition, Table 2 summarizes the extent of research in e-Government; it shows that studies have frequently focused on G2G issues of e-Government initiatives. In sum, it also shows that there is a need to conduct studies to investigate the drivers, barriers and businesses' perceptions towards the use of e-Government (demand-side).

CONCLUSION

From the theoretical standpoint, the results gained from this study were consistent with the theories and previous literature. The empirical evidence from this study contributes to the body of knowledge in the fields of IS and e-Government adoption. This study was undertaken with various underpinning theories. Therefore, this study could contribute to each of these theories by means of supporting the theories.

The methodological contributions of this study are basically related to identifying the types of e-Government applications adopted by the firms. Furthermore, it contributes to demonstrate the extent of usage for each application. It aims to provide a description on the current state of e-Government adoption among businesses. It is also targeted to answer the questions on what applications have been adopted and how these applications have been used among businesses. This has filled the gap in the literature as previous studies mainly left out whether an application has been adopted or not and whether there is any plan to adopt an application.

MANAGERIAL IMPLICATIONS

The findings have implications for policy makers, businesses themselves and for vendors or consultants who depend on e-Government for revenue through the promotion of e-Government products and services. The e-Government adoption profile described in this study provided an overview of e-Government adoption among businesses.

As a final point, the literature highlights the need for more studies to be conducted regarding the e-Government, especially in the developing countries which are quiet beginners in adoption this area. To enlarge the usage of e-Government among the developing countries' companies and reaching a point of defining the accurate numbers of the current e-Government norms, more empirical studies with an extensive cooperation between private and public sectors have to be performed in a period of 1-2 years. In addition, literature review

indicates that there is a lack of empirical evidence on the factors that influence business firms to adopt e-Government and the impact on firm performance. Hence, this study focused on e-Government adoption among businesses in developing countries. Furthermore, the inconclusive findings by previous studies on e-Government adoption had prompted several authors to conduct more research in this area of study.

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