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APPLYING THE E-GOVERNMENT SERVICES IN SAUDI ARABIA: A THEORETICAL VIEWPOINT

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ABSTRACT

Electronic government (E-government) diffusion and implementation is a global topic that concerns many developed and developing countries worldwide. However, international efforts to provide e-services to different stakeholders (citizens) differ from one country to another regarding readiness, challenges, implementations, and diffusions. These differences are due to technological, political, cultural, economic, and social differences. Several studies on e-government have focused on the technological, economic, and political aspects of implementation. In contrast, others have examined factors that influence citizens' performance of e-government services, such as availability, accessibility, usability, awareness, and trust.

This study will focus on the influence of Mediators roles played by third parties in helping diffusion and implementation of e-government. The outcome of this study will create a conceptual model for studying e-government implementation in Saudi Arabia. The theoretical implications of the study are discussed, offering recommendations for future research directions.

1. Introduction

Over the years, Information Communication Technology (ICT) has been considered significant in modernizing and transforming most organizational functions and operational practices (Beynon-Davies, 2005). Literature indicates that ICT has acted as a Mediators in facilitating significant interaction among a wide range of stakeholders (Grimsley et al., 2007; Zhang et al., 2005). In terms of electronic services provisioning, ICT has played a significant role in the private and public sectors (Beynon-Davies and Williams, 2003). However, much of the research that has been published pays close attention to functionality issues (Millard, 2007; Layne and Lee, 2001) and the technical aspects (Chen, 2002; Safai-Amin, 2000) of ICT in an electronic service delivery context. Comparatively, little attention has been paid to issues about usability, accessibility, and the availability of public electronic services from a citizen's perspective (Carter and Belanger, 2005; Reddick, 2005; Becker and Nowak, 2003). The emergence of the need for electronic service delivery in the public sector has been influenced by the need to serve citizens with better, more efficient, and transparent means of interacting with the government using web-based systems (Fang, 2002; Brannen, 2001).

When the Internet emerged in the mid-1990s (Lee et al., 2005), it was merely utilized for information provisioning and sharing, as well as educational purposes. Nevertheless, today it has become part of day-to-day operational activities for many people (Lofstedt, 2005; Villaplana, 2003). From a commercial perspective, the Internet has become a vital business medium for organisations attempting to expand their market portfolio through web presence (Richards and Jones, 2006). On the other hand, Pan et al. (2006) asserted that non-profit organisations, such as governments, can increase their information availability and improve their security, services, and local citizens' satisfaction through the Internet. Most governments in developed and developing countries have established web portals to offer their citizens (Chen et al., 2006; Lee et al., 2005). Among others, Saudi Arabia is one such developing country that has cultivated its web presence since the late 1990s (Kostopoulos, 2003; Al-Tawil, 2001). Literature indicates that with the help of these web portals, government organisations have increased their productivity (Norris and Moon, 2005), gain a competitive advantage (Deakins and Dillon, 2002; Whitson and Davis, 2001) and reduce the gap between the different government agencies and local authorities (Eyob, 2004; Silcock, 2001). However, there are considerable variations in the implementation and implementation of E-government services within several government organisations at a national and international level (Heeks, 2002; Moon, 2002). These differences can be attributed to the individual, organizational requirements, circumstances, readiness, as well as structure, size, and cultures (Kamal et al., 2008; Lam, 2005; Van Dam et al., 2005). Although developing countries in the Gulf Cooperation Council (GCC) region have invested heavily in E-government implementation (Al-Shafi and Weerakkody, 2008; Al-Shafi, 2007), several researchers argue that these implementations have resulted in varying results and delayed outcomes (Al-Shafi and Weerakkody, 2007; Kurunananda and Weerakkody, 2006).

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2. Literature Review

The internet and different information communication technologies (ICTs) are virtual gateways for E-government systems, and they play a crucial role in service delivery. Like E-commerce, they provide a direct connection between government organisations and citizens. Nevertheless, the introduction of such online services has emerged as an intimidation tool that threatens to bypass traditional intermediaries' role as gateway service providers (Gellman, 1996). By doing so, transactional costs will be reduced and will consequently limit the intermediaries' role in delivering public services (Janssen and Klievink, 2009). As a result, some have argued that traditional intermediaries will eventually perish and will no longer act as a mediator between government agencies and citizens, resulting in disintermediation (Benjamin and Wigand, 1995; Gellman, 1996; Malone at.al 1987).

In developing countries, limited ICT infrastructure, lack of internet access, skills needed for the use of E-services (digital divide), and low trust in technology (Heeks, 2003; Sahay and Avgerou, 2002) have resulted in low diffusion and implementation of E-government services. In the new developments of multi-channel services delivery, traditional intermediaries have become a central issue for developing countries to leverage the E-government relationship with their stakeholders, government, citizens, and business (Al-Sobhi et al., 2009; IT-Arabia, 2007). The Mediators provides a trusted information channel gateway and provides help and support (Bailey and Bakos, 1997; Sarker et al., 1996), which may impact citizens' usage of E-government services (Al-Sobhi et al., 2010). As the E-government system aims to deliver E-services for different stakeholders, intermediaries have been widely used for years. They have the skills and knowledge of critical government factors necessary for successful government-to-citizen (G2C) E-government relationships (Alsobhi et al., 2011; Janssen and Klievink, 2009). Therefore, a Mediators organisation can provide citizens with a useful access gateway, supporting E-government services, mostly if the traditional Mediators are consolidated alongside information technology (Bailey and Bakos, 1997). Unlike top E-government countries, developing countries have limited resources regarding E-government readiness, which negatively affects their E-government development position. This needs additional attention from decision-makers to bridge the lack of technical resources and skills necessary for new E-government services. Several studies offered by researchers in developed countries (Carter and Weerakkody 2008; Carter and Belanger 2005; Warkentin et al., 2002) promised to determine factors that encouraged citizens to use e-government services. Relatively few researches have been offered in developing countries such as the Arabian Peninsula (AlAwadhi and Morris 2008; Al-Fakhri et al., 2008). Among these countries is Saudi Arabia. Saudi Arabia is a rich developing country in the Middle Eastern region that has started implementing national E-government projects since 1998 (Sahraoui et al., 2006; Abanumy et al., 2005). According to the UN report, in E-government readiness, Saudi Arabia significantly transformed its electronic service delivery from 2005 to 2008 (UN, 2008). The Saudi Arabian E-government efforts are focused mainly on big cities like Riyadh and Jeddah. However, an in-depth analysis of these cities illustrates that they have merely managed to implement essential E-government services with emerging research studies accentuating various barriers to successful implementation and progress, which are linked to the government (or service providers) and the citizen (user aspects) (Hamner and Al-Qahtani, 2009; Al- Fakhri et al., 2008; Al-Shehry et al., 2006; Abanumy et al., 2005). According to a recent report by Internet World Usage and Population Statistics (IWS, 2008), the total population in Saudi Arabia is around 28,146,657, and about 6,380,000 Saudi citizens have Internet access. Despite a dramatic increase in the number of Internet users from about 200,000 in 2000 up to 6,380,000, a growth of nearly 3,090% (ibid), there are still delays in utilizing and adopting E-government services (Al-Sobhi et al., 2010; Hamner and Al-Qahtani, 2009).

As shown in the literature, one of the most significant current discussions about the challenges and issues facing the E-government program in Saudi Arabia is the lack of sufficient E-government studies (Al-Fakhri et al., 2008; Dwivedi and Weerakkody, 2007). Exploring the role of intermediaries in the E-government implementation is vitally important. In Saudi Arabia context, many public service offices provide government services to citizens. This number was around 22,759 in 2001, and they are distributed in different cities in Saudi Arabia (Al-Otaibi, 2012, MOCI, 2001). These traditional offices are private physical premises that are authorized by the Saudi government and have existed for over two decades. The primary purpose of these physical offices is to help citizens achieve greater access to public services across the country without needing citizens to visit government departments. Some of these offices are now used as intermediaries by the Saudi Arabia government to facilitate E-government services. While the Saudi Arabia region has established intermediaries under their local E-government strategy, several areas have yet to adopt the concept of intermediaries.

Therefore, understanding factors that influence citizens to adopt new E-government services promoted by intermediaries' role has research value and implications for strategy makers and researchers. Thus, this study's contribution is to develop a framework to examine the factors influencing E-government implementation and the roles of intermediaries (third parties). By doing so, this study aims to reduce the gap between E-government readiness ', _reality 'and citizens' ability to adopt new E-services. This study looks at what value is added by Mediators to citizens and government as a possible subset of Saudi Arabia's E-government infrastructure's facilitating conditions. In addition, a considerable amount of literature has been published which investigates factors that significantly contribute to citizens' intention to use E-government from the internet applications' point of view and different ICTs (Al-Shafi and Weerakkody, 2009; Alawadhi and Morris,2008; Carter and Weerakkody 2008; Carter and Belanger 2005; Warkentin et al., 2002). The implementation

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issue between citizens and intermediaries has rarely been mentioned in the literature regarding E-government diffusion and implementation.

Furthermore, the citizens' implementation of E-government in many developing countries, including Saudi Arabia, has not progressed as expected (Hamner and Al-Qahtani, 2009; Al-Fakhri et al., 2008). Thus, there is a need to understand to what extent Mediators can minimize challenges that hinder E-government implementation. Consequently, these issues encouraged this study to generate questions such as the challenges facing the take-up of E-government services in Saudi Arabia and the roles that Mediators could add to promote accelerated e-government development?
To explore the E-government efforts in Saudi Arabia and answer the research mentioned above questions, this study uses a mixed-methods research approach. This involves two stages of data collection: qualitative and quantitative ones. The first stage comprises three sets of in-depth interviews with two board directors of a massive government department and a senior member from the Board of Directors of the Steering Committee of the e-government in Saudi Arabia. This is followed by involving three sets of in-depth interviews with three Mediators managers in Saudi Arabia. This aimed at determining the potential roles of intermediaries in an e-government setting. This is considerably important for the study as there is a lack of published study and official information about E-government implementation and Mediators. On the other hand, the second stage of this research focuses on surveying Saudi citizens to examine the factors influencing their implementation and Mediators' role in disseminating E-government services.

The arguments mentioned above highlight the importance of intermediaries in playing an essential role in E-government implementation. Therefore, this study aims to address the research question: ―How intermediaries can influence citizens' implementation and use of E-government services?" This study is a first attempt to investigate the role of intermediaries in E-government implementation in the context of Saudi Arabia. By conceptualizing the role of Mediators organizations within an E-government implementation model using Unified Theory of Acceptance and Use of Technology (UTAUT) as a theoretical base, this study will help provide a better understanding of citizens' implementation of E-government services.

The research presented in this study will make the following contributions to knowledge in the field of E-government implementation and diffusion:

1. In e-government research, many studies have investigated different factors that may influence E-government implementation. However, no studies have been conducted that explore the roles of intermediaries in e-government implementation. For example, many researchers have investigated the relationship between trust in technology (internet) and intention to use e-government services. The intermediaries were considered mediums that can improve confidence in potential adopters.
2. This study offers a conceptual model that can be used to analyze the factors affecting implementation and intermediaries' roles in facilitating E-government services.
3. In E-services, intermediaries were found to develop trust between service providers (companies) and service requesters (customers). This study proposes that intermediaries will impact the development of confidence in e-government implementation and establishes its role in the E-government implementation process.

3. Challenges and Barriers

Globalisation may have many different meanings depending on its context, as there is no standard definition that can specify globalisation. Nevertheless, the dimensions of globalisation and its impact can be divided into four critical aspects: economic, political, cultural, and environmental elements (Wiseman, 1998). The new citizenship driven by globalization aims to leverage participating individuals in life activities, interconnection, and the ability to combine globally through ICTs. Carnoy (1999 p 14) associated globalisation with the technology revolution ―globalisation and new information technology and innovation processes they foment are driving a revolution in the organisation of work, the production of goods and services, relations among nations, and even local culture. No community is immune to the effects of these revolutions. It is changing the very fundamentals of human relations and social life. Despite globalisation this change would be enabled through ICTs (Walsham, 2001). Lect and Grosseck (2005) added that, in terms of global expansion, ICTs had significantly impacted many countries over the world, for instance, the USA, Europe, and Southeast Asia. Examples of these impacts include the radical shift of how government organisations are structured, changes in economic movement, and changing communication methods. ICTs change the way of doing things from a distance. They have played a significant role in impacting social and economic development (Hanna, 2003). Hanna also suggested that ICTs enable the comprehensive action that affects all sectors of the state.
Similarly, Selwyn (2004) added that ICTs could empower individuals' participation, raise social communication, and enable government services. Additionally, however, he argued that if citizens were excluded from the benefits of ICTs, they lose the opportunities that ICTs can add to societies. Recently, many governments worldwide have recognized the importance of ICTs for the delivery of services to businesses, citizens, and even for communication between government agencies.

Moreover, the most significant local and global public administration initiatives were dependent on the adequate application of ICTs, and amongst these initiatives, E-government implementations were the most successful. Therefore, 189 countries are listed in the 2008 report published by the United States. Researchers such as Stoltzfus (2005) state that

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E-government is a global phenomenon that many countries worldwide aim to establish. This is external global pressures (international recognition of the condition being an E-government state) and internal citizens-centric administration. Therefore, E-government establishment is no longer optional or an added burden for countries but an essential core activity to promote better governance (Gupta and Jana, 2003; Mulgan and Albury, 2003). The most important aspect of the new E-government is that it enhances the relationship between governments and their stakeholders, particularly citizens.

Until recently, governments have managed public sector organisations using a _closed-door 'administration policy, but today this role has been changed. Governments worldwide are more citizens-focused and transparent (Alshawi, and Alalwany,2009; Mosse and Whitley, 2008; Wang et al., 2005). Bakry (2004) and Al-Shafi and Weerakkody (2010) state that e-government can be understood from a citizens' satisfaction perspective. The purpose of establishing E-government is to grasp citizens' expectations and meet their demands by providing good quality services by a control system such as E-government (Gupta and Jana, 2003; Snellen, 2002). This will help citizens utilize any technologies, such as E-government, which will lead citizens to achieve public service providers (Wong and Welch, 2004; West, 2004; Chadwick and May 2003; Snellen, 2002). Top government organisations control public services' demand by using the latest technologies. Thus, information technology is commonplace in every country for managing the massive amount of citizens' information and data needed to expand countries' economic development by focusing on citizens' needs and requirements (Bakry, 2004).

Various studies have stated different purposes for establishing E-government systems (Holliday and Yep, 2005; Tolbert and Mossberger, 2003; Fang, 2002). Each of these studies highlights the need for e-government systems to leverage government agencies' efficiency and effectiveness to deliver a superior quality of government services and information to society in the information age. As such, the public can expand their access to government services and information via new ICTs. Some researchers highlight the primary purpose of E-government systems as improving transparency to the public and its potential to enhance social democracy (Welch et al., 2005; Wong and Welch, 2004; West, 2004; Chadwick and May 2003; Snellen, 2002). The new government reforms are the way to increase citizens' participation in public services and citizen empowerment to organise internal affairs by ethical principles for both government and citizens (Basu, 2004; Chadwick and May 2003). E-government, in this case, helps in increasing the responsiveness to citizens' needs and requirements (Chen et al., 2006; Moon, 2003). It also enhances the communications between the government and citizens through improved active involvement of the citizens (Chen et al., 2006). Thus, the E-government can build a good relationship between government bodies, citizens, and businesses by making the interactions easier, smoother, and more efficient (Lee et al., 2005). Globally, various organisations are taking steps to provide one-stop services to citizens and businesses, and many of them have succeeded in this duty.

There is a need to be explicit about precisely what is meant by the phrase electronic government. Electronic government is a term frequently used in the literature, but there is no consensus about its meaning to date. Electronic government is a relatively new concept that emerged in 90s (Caldow, 1999) and is commonly referred to as E-government or E-Gov. It is generally understood to mean public services with electronic support. The combination of the letter e‖ and the government indicates that the government utilizes the power of "e" to execute public services electronically. Several researchers have offered different definitions of the e-government phenomena. However, these definitions differ depending on e-government interests and perspectives and the community's goals and values (Lowery, 2003). For example, the term "e-government systems" is used by Heeks (2006) to refer to socio-technical information systems: combining the technical and the human. It is used by the government to improve internal relationships for the government and transform services externally to society, businesses, and citizens. The world bank's definitions support such roles of e-government systems as they define e-government as ―use by government agencies of information technologies. The report includes Wide Area Networks, the Internet, and mobile computing, which can transform relations with citizens, businesses, and other arms of government‖ (www.worldbank.org, 2003).

Carter and Belanger (2005) offer a far more interesting and promising definition for e-government. They define it as ―the use of information technology to enable and improve the efficiency with which government services are provided to citizens, employees, businesses, and agencies‖ (Carter and Belanger, 2005, p. 5). Similarly, although with more focus, Fang (2002) defines e-government as ―a way for governments to use the most innovative information and communication technologies, particularly web-based internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes‖ (Fang, 2002 p4). As the different definition perspectives suggest, the internet is one of the most popular channels that could potently handle and support the delivery of public services (Koga, 2003). Nowadays, governments worldwide are aiming to utilize the power of the internet application and different ICTs to leverage effectiveness and efficiencies in delivering public services for citizens and other stakeholders. The critical idea of e-government, as the definition mentioned above, is how to use different technologies and applications, particularly internet applications, as tools to enhance the relationship between government on the one hand and the public (citizens and business) on the other.

However, some scholars in the e-government realm define e-government from an innovative perspective where technology is one part of e-government systems' innovations. Different successful innovations need to be implemented to increase outcomes efficiency and effectiveness of government services.

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This statement emerges from Mulgan and Albury (2003) where the definition indicates ―effective government and public services depend on successful innovation to develop better ways of meeting needs, solving problems, and using recourses and technologies‖. This definition shows that governments have to use resources other than technology to position themselves well in e-government implementation. Also, it illustrates that e-government does not have to be concerned only with ICTs but must consider other ways required for delivering services, such as physical premises and offline infrastructure. Figure 2.1 illustrates this argument where the Mediators' concept is shown as helping to bridge the technology gap between citizens and public agencies.

4. Global Examples of Intermediaries

There are many examples of intermediaries working in partnership with government or, as they are called, public-private partnerships (PPPs) to facilitate services for public or citizens worldwide, and numbers have increased during recent years (Johnston and Gudergan, 2007; Teicher et al., 2006; Bovaird, 2004; Wettenhall, 2003). Nowadays, the most famous Mediators is the VFS global company, which helps people apply for United Kingdom visas. This mediator has established a partnership between the UK border agency at British Embassies worldwide and the private sector (http://www.vfs-uk-sa.com/). Based on this partnership, government e-services are simplified, and deliver to the public is made more straightforward. Many examples of intermediaries working with governments can be found worldwide. The Al-Elm company is another example, with its cooperation between the government and the private sector (http://www1.elm.com.sa/Portal/En). This company is a partnership between the Saudi government and the private sector, and it aims to benefit the massive government database, building and designing electronic systems to deal with the accumulated data. These data can then be provided for stakeholders, the public, and private individuals easily and straightforwardly.

Another example comes from Chile in South America. In the initial stages of establishing the Online Tax filing system, which started in 1999, the Chilean government stated that only 5 percent of taxes were collected online. Six years later, they reported that this had risen to more than 95 percent of taxes declared (IPPP, 2009). The services were found accessible and easy to use, but difficulties obstructed the public with internet access. The solution was to establish a hub of centers between the government and taxpayers, called a national public- a private network. The Chilean government created more than 880 such centers (intermediaries) across the country (ibid). The taxpayers can now pay their taxes via these intermediaries either free or at a nominal cost, with help and support from the centers' staff. From India, PC Kiosks (telecentres) are used to transform and improve the value of government services (Toyama el al., 2005). Using internet cafes in villages and rural areas provides access for the e-services requesters (citizens). More than 150 PC Kiosks are established across India; the main objective is to empower Indian citizens with sustainable access to e-government services resulting from information technology, thus enhancing socio-economic development (ibid). In summary, these Mediators is essential for many reasons, the most important being furthering e-government implementation and usage.

5. Theories and Models

As prior literature in the information systems (IS) and e-government realms show, few researchers have carried out studies investigating the impact intermediaries have on citizens' implementation and usage of e-government (Al-Sobhi et al., 2010; Janssen & Kilevink, 2009). Most studies associated with e-government implementation have focused mainly on citizens' attitudes toward e-government at the individual level (Al-Shafi and Weerakkody, 2010; Carter and Weerakkody, 2008; Carter, and Belanger, 2005). Furthermore, studies have also highlighted the need to examine the implementation of e-services from the users' perspective, which are prompted by intermediaries' roles (Howells, 2008; Bailey and Bakos, 1997). Studies that have focused on understanding citizens' behaviour when using intermediaries to access e-services have not utilized conceptual models to examine the influencing factors (Al-Sobhi et al., 2010; Janssen and Kilevink, 2009).

As many studies in information systems (IS) built their arguments on a theoretical background (Al-Shafi and Weerakkody, 2010; Alawadhi and Morris, 2008; Carter and Weerakkody, 2008; Carter and Belanger, 2005), it is essential to present a theoretical model or framework that helps to understand the factors that affect the individual level (citizens) of e-government services implementation prompted by intermediaries. Users' acceptance and implementation of technologies are considered as primary conditions for the successful implementation and progression of any IT project. This is because users' attitudes to use and adopt new technologies are important in determining the success or failure of any information systems project (Succi and Walter, 1999; Pinto and Mantel, 1990). According to Venkatesh et al. (2003: p. 446), users' acceptance of technology refers to the individual's initial decision to interact with the technology‖. It has been found that numerous theories and models could be used to examine users' implementation of information technology (IT). For example, Technology Acceptance Models (TAM), Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB), the Motivational Model (MM) Diffusion of Innovation (DOI), the Model of PC Utilization (MPCU), Social Cognitive Theory (SCT), the model combined between TAM and TPB, and finally the most recent model, the Unified Theory of Acceptance and Use of Technology (UTAUT) could be used. Thus, researchers can pick from the above and apply the most suitable model, ignoring the others (Venkatesh et al., 2003; Dwivedi, 2005). Therefore, to build a conceptual model specifically for intermediaries in the E-government context, various IS models are reviewed to capture the most relevant factors in technology implementation and acceptance. To realize its aim, the chapter is structured as

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follows. The next section reviews the IS model of technology implementation. This is also used to give a short discussion and introduction to the model adopted to explore e-government services from the citizens' perspectives. The study presents the foundations of the proposed model and hypotheses for e-government implementation in Saudi Arabia. This is followed by demographic variables affect e-government implementation. The last point summarizes the overall study.

5.1 Theory of Reasoned Action (TRA)

The contribution area of the theory of reasoned action (TRA) is the initial theory that aims to understand human behaviour (Venkatesh et al. 2003; Ajzen, 1991). It proposes to explain behavioural intention towards new information technology. This theory consists of four main core constructs: behaviour, behavioural intention, attitude toward behaviour and subjects norm. According to Ajzen (1991), behaviour is determined by behavioural intention and attitude towards the behaviour and subject norms, which will explain behavioural intention toward implementation. This links the behavioural intention as a dependent variable, and attitude toward behaviour and subject's norm as independent variables. Fishbein and Ajzen (1975, p. 216) define attitude towards behaviour as an individual's positive or negative feeling (evaluative effect) about performing the target behaviour‖. Also, they define subjective norm as ―the person's perception that most people who are important to him think he should or should not perform the behaviour in question‖ (Fashbein and Ajzen ,1975, p. 302). TRA was used in a variety of technology acceptance uses, as shown in Table 3.1, where TRA's use is outlined in the public sector context.

5.2 Technology Acceptance Model (TAM)

Many studies state that TAM's model is widely used in this realm (Carter, 2008; Gefen and Warkentin, 2002). Davis first established TAM (1989), based on the theory of reasoned action (TRA) and constructed of two major core beliefs: perceived usefulness (PU) and perceived ease of use (PEOU), both of which influence one's intention to use a system (Figure 3.1). Davis (1989) defines PU as "the degree to which a person believes that using a particular system would enhance his or her job performance"(Davis 1989 p 320). In contrast, PEOU refers to "the degree to which a person believes that using a particular system would be free of effort "(ibid). This refers to the steps required from users to use any system, where a person believes refers to, users' belief of utilizing any systems will positively affect their job performance.

While TAM is a very well-researched and straightforward model that aims to explain and determine the factors affecting computer users' acceptance in a wide range of contexts, it also gives predictions and reasons why any systems may not succeed (Davis et al., 1989). TAM places researchers and practitioners in tracing external factors' impact on internal beliefs, attitudes, and intentions (ibid). According to Davis, the TAM model predicts that if these two core factors (usefulness and ease of use) are high, the intention to use will increase accordingly. Furthermore, perceived ease of use is predicted to influence perceived usefulness, where the intention to use is predicted by the two factors, perceived usefulness and perceived ease of use (Davis, 1989). According to many researchers, TAM is a reliable model, valid and powerful in predicting users' implementation of new technology in a variety of contexts (Bélanger and Carter, 2008; King and He, 2006; Gilbert et al., 2004; Phang et al., 2005). Table 3.2 summarises the context and services in which TAM might be applied.

Table:1 Examples of Technology Acceptance Model Utilised in Public Sector Research

Services Context	Descriptions	Level of analysis	References
Online tax services in western countries	TAM model is well- used in E-commerce context, measuring customers' behavioural intentions to use technology in online shopping and making online	Individual	Warkentin et al., 2002
Electronic tax-filing systems in Taiwan	TAM was applied in different technologies related to E-government services, like the tax-filing system. This study identified the appropriateness of using the extended TAM to understand people's intention to adopt the	Individual	Wang, 2003
Online voting and license renewal	TAM was used as a theoretical framework to further understand factors influencing citizens to adopt services such as online voting and license renewal	Individual	Carter and Bélanger, 2005

As explained above, many studies were adopting TAM to investigate individual attitudes on information systems implementation. However, many limitations are commonly reported in the literature on the use of TAM for predicting user behaviour. The most important one is the lack of context focus where constants of TAM do not reflect a variety of user tasks' environments and so failed to predict IT usage, as many factors can affect users' utilization (Venkatesh et al., 2003; Moon and Kim, 2001; Dishaw and Strong, 1999).

5.3 Theory of Planned Behaviour (TPB)

The Theory of Planned Behaviour (TPB) was developed by Ajzen (1991) and is an extension of the theory of reasoned action (TRA) (Ajzen, 1991; Ajzen and Fishbein, 1980). Therefore, TPB was developed to overcome the limitations of the theory of reasoned action (TRA). The TPB consists of different core constructs: attitude toward behaviour, subjective norms (adapted from theory of reasoned action), perceived behavioural control (PBC), and intention and behaviour. Ajzen (1991, p.188) defines the perceived behavioural control construct as the perceived ease or difficulty of performing the

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behaviour‖. As such, Ajzen (1991) hypothesises that perceived behavioural control (PBC) is an additional construct that helps explore intention and behaviour. This perceived behavioural control construct is an original contribution to the theory of planned behavior TPB, which emphasizes that an individual's intention is a central factor in performing the behaviour of intention (Ajzen, 1991). The new PBC factor can directly affect behaviour or indirectly through behavioural intention. The theory of planned behaviour (TPB) was applied in the contexts of many information systems. Table 3.3 summaries used the theory of planned behaviour (TPB) in the public sector context.

Table 2: Examples of Theory of Planned Behaviour Utilised in Public. Sector Research

Service Context	Descriptions	Level of analysis	References
Public acceptance of E- government services in Taiwan	TPB is a well research model, explaining factors affecting citizens' implementation of online services and tax filing and payment system.	Individual	Hung et al., 2006
Electronic toll collection to pay toll plazas in highways	TPB used as theoretical promises for researchers to understand factors that influence drivers in using a new electronic toll collection system in Taiwan	Individual	Chen et al ., 2007
Electronic tendering system	TPB used as the theoretical base for research to understand factors that influence using systems to apply for services such as tendering	Organisation	Chu et al., 2006

Although TBP was employed by several researchers to explain human behavior across contexts, it was initially based on the theory of reasoned action (TRA) (Ajzen,1991) and thus had its limitations. Eagly and Chaiken (2002) used different variables in the TRA model that may predict intention and behavior, such as moral obligation and habit, which are not applied in TBP. Given the complexity of E-government and its adopters' diversity, TBP, therefore, has limitations as a theoretical model for studying e-government implementation.

5.4 Diffusion of Innovation (DOI)

Diffusion of Innovation (DOI) (sometimes referred to as Innovation Diffusion Theory, IDT) is how information is disseminated to society. DOI was introduced by Rogers (1995), who suggested that implementation of innovation at the individual level can be categorized into five levels: earliest adopters of innovation, innovators, early adopters, early majority, late majority, and laggards. Diffusion of innovation (DOI) theory consists of five factors - four were found to have a positive impact on the rate of implementation (trialability, observability, relative advantage, and compatibility), and one has a negative impact on the performance of innovations (complexity). In the information systems context, Moon and Benbasat (1991) further developed the DOI model and generated different constructs to understand technology acceptance at the individual level. These are ease of use, result demonstrability, visibility, voluntariness, relative advantage, compatibility, trialability, and image. DOI has been used in the public sector, and the focus of DOI is the diffusion of the services to society. Table 3.4 summarises the context and technology of DOI utilized in the public sector.

Table 3: Examples of Diffusion of Innovation Theory Utilised in Public Sector Research

Context	Descriptions	Level of analysis	References
Citizens implementation of online voting and license renewal	DOI helps a researcher to explore factors influencing implementation of technology and innovation, this will enhance the decision-making process and further spread innovations between groups of people.	Individual	Carter and Bélanger, 2005
Management accounting practices	DOI is used as a theoretical base for diffusion and implementation of management accounting practices in public sector.	Organization	Lapsley and Wright, 2004
Software engineering innovations	DOI is applied for predicting the implementation of technological innovations, including those related to software engineering.	Organization	Bayer and Melone, 1989

As shown above, several studies were employing DOI to explain factors affecting the implementation of innovation. However, this theory has some limitations in providing reasons on how attitudes will influence the development of acceptance and rejection behaviours in users' decisions towards implementation and how the innovation's characteristics will help in their beliefs (Karahanna et al., 1999).

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Table 4: Factors Effecting the Implementation of Information System

Constructs	Definition	References
Performance expectancy	The degree to which an individual believes that using the system will help him or her to attain gains in job performance.	(Venkatesh et al., 2003. Davis, 1989)
Effort expectancy	The degree of ease associated with the use of a system.	(Venkatesh et al, 2003. Morris and Venkatesh, 2000)
Social influence	The degree to which an individual perceives the importance of the beliefs of others that he or she should use the new system.	(Irani et al., 2009. Venkatesh and Brown, 2001; Tan and Teo, 2000; Fulk and Boyd, 1991; Fulk et al., 1987)
Facilitating conditions	An organizational and technical infrastructure that supports individuals to use systems and remove barriers.	(Carter et al., 2008. Phang et al., 2005; Venkatesh et al., 2003)
Behavioural intention	The degree to which citizens intend to use the Internet or a Mediators for e-government services in the future.	(Venkatesh et al., 2003; Ajzen, 1991)
Trust of Mediators	The degree to which individuals adopt Mediators channels to communicate with government online.	(Howells, 2008; Pavlou and Gefen, 2004; Chircu et al., 2000; Bailey and Bakos, 1997).
Age	Differences in adopting technology based on age.	(Venkatesh et al., 2003. Morris and Venkatesh, 2000)

6. Summary and Conclusion

This study reviewed relevant literature to identify the research gap in the e-government context. The previous discussion of literature perspectives indicates that there is no agreed definition of e-government. However, the e-government is mainly known as e-services that are provided to different stakeholders, governments, businesses, employees, and citizens. The main tools that are used by the government to provide e-services are internet applications and Mediators organisations. Almost every country is interested in obtaining e-government applications to further develop its economy based on new information age technologies. However, many challenges inhibit further development of e-government services from the government ‘s perspective (e.g., e-government readiness) alongside many factors influencing citizens to adopt e-government services (e.g., digital divide and trust).

Accordingly, the intermediaries have a massive impact on minimizing the challenges that may slow down e-government services development. The Mediators is found to have different roles in implementation and diffusion in the e-services context. However, no such model has discussed the relationship between e-government implementation and intermediaries. Therefore, one of the most significant findings emerging from this study is that no such model was found in the e-government literature that models the Mediators to e-government implementation at the individual level (citizens). Therefore, as highlighted in the literature, one of the main objectives of this study is to conceptualize the Mediators within any model of an information system to measure the Mediators' impact in e-government implementation. Future studies might focus on modeling the Mediators concept in e-government implementation. This will allow this study to identify the most critical factors influencing citizens/ intention and usage of e-government services (in the Saudi e-government context).

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