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Investigating the Adoption of E-government Services in Qatar Using the UTAUT Model

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ABSTRACT:

Electronic government (e-government) initiatives are in their early stages in many developing countries and faced with various issues pertaining to their implementation of e-government services. Like many other developing countries, the e-government initiative in the state of Qatar has faced a number of challenges since its inception in 2000. This study utilises the Unified Theory of Acceptance and Use of technology (UTAUT) model to explore the adoption and diffusion of e-government services in the state of Qatar. 1179 citizens were surveyed using the UTAUT model. The empirical data reveal that performance expectancy, effort expectancy, and social influences determine citizens' behavioural intention. Additionally, facilitating conditions and behavioural intention determine citizens' use of e-government services. Implications for practice and research are discussed.

KEY Words: Adoption, Diffusion, E-government, UTAUT, Qatar

INTRODUCTION

With the emergence of the concept of electronic government (e-government), public services around the world have realised the importance of making their services more efficient and available (Affisco & Soliman, 2006). While citizens become more Internet savvy and experience good e-services from the private sector, they begin to expect the same high standards from government agencies. E-government promises to emulate the private sector by offering more efficient, transparent and accessible public services to citizens and businesses (Al-Shafi, 2008; Sahraoui, 2005). Although, the benefits of e-government are well documented, the adoption and diffusion of the concept has been sparse in both developed and developing countries. This is particularly true in the Western Asian region where although large sums of money have been invested, most Arab countries have faced a number of challenges that have slowed the implementation and diffusion of their e-government initiatives (Al-Shafi and Weerakkody, 2008; Sahraoui, 2005). The state of Qatar is one such example. The Qatari E-government initiative was launched in 2000. In global terms, the UN E-government readiness report (2008) ranked Qatar's e-government project as number 53 worldwide. As in many countries, the national e-government focus in Qatar is to achieve the highest performance in executing governmental transactions electronically, through streamlined business processes and integrated information technology solutions (IctQATAR, 2009). In 2004, ictQATAR was established to manage and develop the overall Information and Communication Technology (ICT) strategy in Qatar relating to infrastructure, service delivery and legislation of public services. A year later ictQATAR took overall control of the national electronic government initiative with an aggressive plan for e-government implementation in parallel with e-health and e-education programs using a phased implementation plan. As part of this ongoing strategy to encourage accessibility of e-government services, free wireless internet access was introduced in 2007 in public parks. The Qatari government hopes that this concept will encourage more citizens to use e-government services and help bridge any digital divide that may exist in the state of Qatar by augmenting citizens' participation and engagement in public services.

Given the above context, the rationale for this research is to gain a better understanding about the adoption and diffusion of 'e-government services' from Qatari citizen's perspective. The relative newness of the e-government concept in Qatar and the lack of prior published research that explore the citizen's perception of electronic government services offered the motivation and rationale for undertaking this research. Furthermore, initial research conducted by the authors indicate that the adoption and diffusion of e-government services has been slower than the Qatari government's expectations (Al-Shafi, 2008). Given this context, this research aims to examine the factors influencing citizens' intention to adopt e-government services in Qatar. In order to achieve this aim a survey based quantitative research strategy is adapted. Since the primary aim of the research is to explore the intention of citizens to use e-government services in Qatar, this is achieved by examining their perceptions of 'Ease of Use' and 'Usefulness' in relation to the e-government services offered. To pursue this line of inquiry, this research uses Unified Theory of Acceptance and Use of Technology (UTAUT). UTAUT theorizes that an individual's behavioural intention to use a technology is determined by performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003; 2008).

In an e-government context, Moon (2002) proposed that IT and web-based public services could help governments to restore public trust by coping with corruption, inefficiency, ineffectiveness and policy alienation. Conversely, lack of access to e-services (Chircu and Lee, 2005) and digital divide (InfoDev, 2002; John and Jin, 2005; Carter and Bélanger, 2005; Ifinedo and Davidrajuh, 2005; Chen et al., 2006; and Carter and Weerakkody, 2008) are challenges that can influence trust and thereby impede the further take-up of e-government services. For instance, research in the US and UK have identified a number of socio-economic factors that widen the digital divide in terms of using electronic services (Thomas & Streib, 2003; and Dwivedi & Irani, 2009). To bridge the digital divide, Reffat (2003) suggests that governments could help by providing computer education especially to elderly and younger people. These findings indicate that various researchers and practitioners have attempted to offer insights into the implementation, acceptance and diffusion of e-government services in different national contexts (Irani et al., 2009; Al-Shafi & Weerakkody, 2008; Carter & Belanger, 2005).

The paper is structured as followed. In the next section, a literature perspective of e-government is offered followed by an outline of the theoretical model used for the research. Then the empirical background to the research is presented. This is followed by the methodology used for the research and a presentation of the empirical results. Finally, the paper concludes by analyzing the empirical results, discussing the research implications and identifying areas for future research.

E-GOVERNMENT IN THE STATE OF QATAR

The State of Qatar is a peninsula with a strategic position at the centre of the west coast of the Arabian Gulf. The total land area is approximately 11,437 sq km. The population estimated to be around 1,500,000 (The Peninsula, 2008); however, only

a minority of the population is citizens by birth, while the rest are residents who live or work in Qatar and are not Qatari's by birth (Al-Shafi and Weerakkody, 2008).

E-government was launched in Qatar in July 2000 and the initial period of strategy formulation and implementation was laggard compared to e-government efforts during the same period in developed countries. However, with the establishment of ictQATAR in 2004 and their consequent takeover of the national e-government initiative a year later resulted in accelerated progress in the last three years. Parallel programmes were introduced in key areas such as health, interior affairs and education. The vision of ictQATAR states "Serve as independent and fair regulator, protecting consumers and businesses from unfair practices as Qatar transitions to a competitive telecoms market. And Lead the government's ICT strategy, nurture innovative technologies to benefit those who live and work in Qatar, and help make people from all walks of life become comfortable with technology" (ictQATAR, 2009).

The Qatari e-government site offers many services, ranging from student registration and paying traffic violations to applying online for visas and permits (Al-Shafi, 2008). In global terms the UN e-government readiness report (2008) ranked Qatar's e-government project as number 53 worldwide from 189 countries analysed in their research, whereas in 2005 it was ranked as number 62 worldwide (Al-Shafi and Weerakkody, 2008). In addition to this, the UN (2005) report considered the Qatari e-government project to be regional (West Asia) best practice. This implies that major improvements and developments have been made during recent times. As part of Qatar government's ongoing efforts to increase accessibility to e-government services and bridge the digital divide, free wireless internet access in public parks – (iPark) initiative was launched in March 2007; this concept provides "Broadband for all" and aims to foster knowledge based society. The primary goal of the initiative is to increase internet usage by establishing "hot spots" in public parks (IctQATAR, 2009). There are currently three designated wireless internet hotspots throughout selected public parks in the city; these parks are targeting visitors who have internet access available on their laptops, PDAs, and other internet-ready devices (Ibid).

A THEORETICAL BACKGROUND

E-Government Adoption

Various researchers have offered different definitions to explain the concept of e-government (Seifert and Petersen, 2002). However, these definitions differ according to the varying e-government focus and are usually centred on technology, business, citizen, government, process, or a functional perspective (Seifert and Petersen, 2002; and Irani et al., 2006; and Weerakkody and Dhillon, 2008). The definition considered to be most suitable for the purpose of this paper is one that defines e-government as making full use of the potential of technology to help put its citizens at the centre of the e-services provided and which makes its citizens its intention (Waller et al., 2001)

Like e-business, e-government promises to deliver a number of benefits to citizens, businesses and governments. According to the literature, the most significant benefits of e-government, are delivering electronic and integrated public services through a single point of access to public services 24 hours a day, seven days a week (Reffat, 2003); bridging the digital divide so that every citizen in society will be offered the same type of information and services from government (InfoDev, 2002; Thomas and Streib, 2003; Huang, 2007); rebuilding customer relationships by providing value-added and personalized services to citizens (Weerakkody and Dhillon, 2008; Davison et al., 2005); fostering economic development and helping local businesses to expand globally; and creating a more participative form of government by encouraging online debating, voting and exchange of information (InfoDev, 2002; and Davison, et al., 2005).

Like any other new technology or organisational concept, the introduction of e-government has also resulted in a number of challenges for both citizens and governments of different countries (Seifert and Petersen, 2002; and Zakareya and Irani, 2005). Lack of access to e-services (Chircu and Lee, 2005; Thomas and Streib, 2003; Huang, 2007; Carter and Weerakkody, 2008), security concerns and trust (Carter and Weerakkody, 2008; Welch et al., 2005; Al-Sebie and Irani, 2005), individual differences (Reffat, 2003) and digital divide (Carter and Bèlanger, 2005; Chen et al., 2006) are challenges that can impact on participation and thereby obstruct the further take-up of e-government services. Various researchers have identified that many of these challenges have influenced e-government implementation and diffusion in various countries in different ways (Choudrie et al., 2005; Al-Shafi and Weerakkody, 2008). This research will focus particularly on the influence that technology complexity and e-government services have on the intention to use a new technology. Similarly, it will also examine the influence performance expectancy and effort expectancy has on the intention to use such services.

In terms of adoption, several studies have explored e-government acceptance in developed countries such as the United States (Carter and Belanger, 2005; Carter et al., 2008) and the U.K (Choudrie and Dwivedi, 2005; Carter and Weerakkody, 2008). However, to our knowledge, no studies exist that examine factors that influence Qatari citizens' adoption of e-government

services. In this respect Lee et al., (2005) state that cross-national research on e-government is sparse in the literature and Dwivedi et al., (2006) and Carter and Weerakkody (2008) highlights the need for studies that investigate the adoption rate and behaviour of e-services. Given this context, this study attempts to address this gap in a Qatari perspective by integrating the aforementioned constructs from the Unified Theory of Acceptance and Use of Technology (UTAUT).

Technology Adoption

Researchers in the field of Information Systems and Technology have for long been interested in investigating the theories and models that have the power in predicting and explaining behaviour (Venkatesh et al, 2003). Various models were developed, such as the Theory Of Reasoned Action (TRA) (Fishbein and Ajzen, 1975) and Technology Acceptance Model (TAM) (Davis, 1982). Each model has its own independent and dependent factors for user acceptance and there are some overlaps (Dillion and Morris, 1996).

TAM has received extensive support through validations, applications and replications for its power to predict use of Information Systems (IS) and is considered to be the most robust and influential model explaining IS adoption behaviour (Davis, 1982; Davis et al., 1989; Davis and Venkatesh, 1996; Lu et al., 2003). On the other hand, it has been found that TAM excludes some important sources of variance and does not consider challenges such as time or money constraints as factors that would prevent an individual from using an information system. In addition, TAM has failed to provide meaningful information about the user acceptance of a particular technology due to its generality (Matheison et al., 2001). Consequently, a number of modified TAM models were proposed which are applicable to contemporary technologies (Horton et al., 2001; Chau and Hu, 2001). However, researchers are confronted with a choice among a multitude of models. Hence, a new model was developed to address these limitations, which is named as the (UTAUT) model and the aim of the model was to understand intention/usage as the dependent variable (Venkatesh et al., 2003). The research model used in the research was based on the (UTAUT).

The UTAUT model consists of eight theoretical models: the theory of reasoned action (Davis et al. 1989), the technology acceptance model (Davis, 1989), the motivational model (Davis et al., 1992), the theory of planned behaviour (Ajzen, 1991), a model combining the technology acceptance model and the theory of planned behaviour (Taylor and Todd 1995), the model of PC utilization (Thompson et al., 1991), the innovation diffusion theory (Rogers, 1995), and social cognitive theory (Compeau and Higgins, 1995). The UTAUT model combines the previous eight theoretical models and is made up of four core determinants of usage intention. Additionally, UTAUT model has been found to be preferred to the abovementioned theoretical models as it is able to account for a high percentage of the variance (R^2) in usage intention (Venkatesh et al., 2003; Alawadhi and Morris, 2008; Colesca et al., 2008; and Loo et al., 2009).

Venkatesh et al., (2003) have tested the unified theoretical model in four different organizational settings for a period of six months and the study showed significant predicts intention (performance expectancy, effort expectancy, social influence, and facilitating conditions), whereas attitude toward using technology, self-efficacy, and anxiety were theorized not to be direct determinants of intention.

The fullness and reliability of the UTAUT model have encouraged the authors of this study to adopt and validate the UTAUT model in the e-government implementation project in Qatar. This model was modified to suit the context of the study.

Performance expectancy was measured by the perceptions of using e-government services in terms of benefits, such as saving time, money and effort, facilitating communication with government, improving the quality of government services and by providing citizens with an equal basis on which to carry out their business with government.

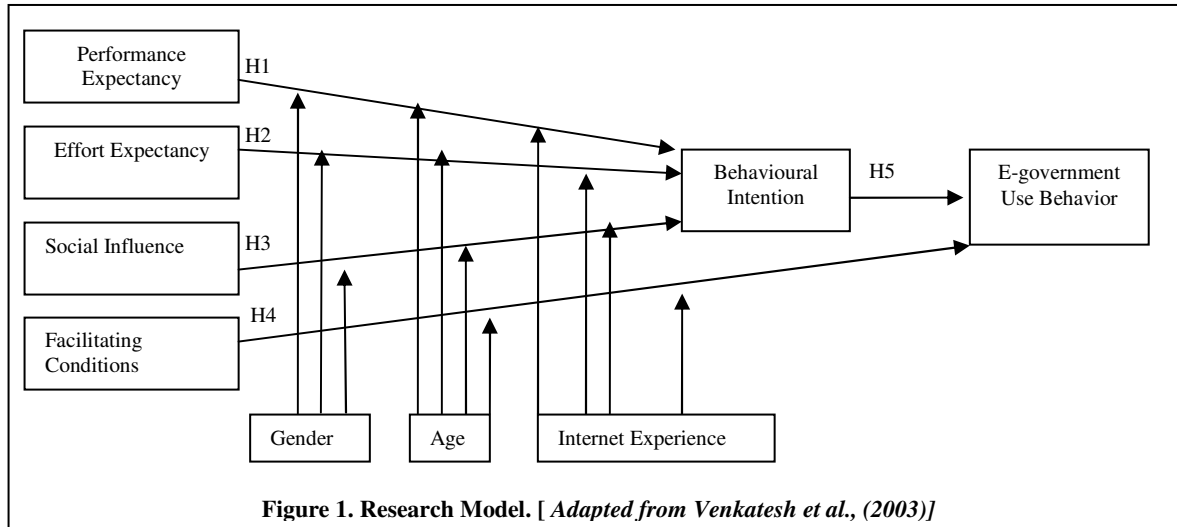
Effort expectancy was measured by the perceptions of ease of use of e-government services as well as ease of learning how to use these services.

Social influence is “the degree to which peers influence use of the system”, whether positive or negative, it is a very important factor in many aspects of the lives of citizens and is likely to be influential (Venkatesh et al., 2003). This study examined the adoption of e-government services by citizens at Qatar. This construct was measured by the perception of how peers affect citizens’ use of e-government services.

Facilitating conditions was measured by the perception of being able to access required resources, as well as to obtain knowledge and the necessary support needed to use e-government services. It is also influenced by the perception of the technology fitting into the lifestyle of the user.

The measurement of behavioural intention included the intention and predicted use of e-government services.

Based on the aforementioned and the theoretical context offered, figure-1 illustrates the research model used in the research



The following hypothesised relationships were generated:

- H1.** There would be a significant positive relationship between performance expectancy and behavioural intentions to use e-government services, and this relationship would be moderated by gender, age and Internet experience.
- H2.** There would be a significant positive relationship between effort expectancy and behavioural intentions to use e-government services, and this relationship would be moderated by gender, age and Internet experience.
- H3.** There would be a significant positive relationship between social influence and behavioural intentions to use e-government services, and this relationship would be moderated by gender, age and Internet experience.
- H4.** There would be a significant positive relationship between facilitating conditions and use behaviour to use e-government services, and this relationship would be moderated by age and Internet experience.
- H5.** There would be a significant positive relationship between behavioural intention and use behaviour of e-government services.

RESEARCH METHODOLOGY

A quantitative research methodology using a survey questionnaire was selected as the primary data collection method for this study. A survey questionnaire was utilised as it is inexpensive, less time consuming and has the ability to provide both quantitative scale and qualitative data from a large research sample (Cornford and Smithson, 1997; Miles and Huberman, 1994; and Yin, 2008). Questions were compiled from IT adoption literature to represent the constructs in the proposed research model (figure 1) and wording of the questionnaire was modified to fit the research context and background information collected from the initial informal interviews mentioned above. 35 closed format questions were used limiting individual responses to multiple choice answers, for example, ranking using likert-scale (5-point scale) and 'yes' or 'no' answers (Yin, 2008; and Field, 2005). This enabled the information to be grouped and analysed statistically (Leung, 2001) using SPSS V15. Since the answers can be influenced by the order the questions are presented, this was carefully planned with an introduction that explained who the researchers represent, purpose of the research and how and why the respondents were selected for the research, and the importance of their answers to the research. The main body contained topical questions ordered logically and in a manner non-threatening to respondents (Liinamaa et al., 2004). After the questionnaire was designed, a limited testing was done using six researchers and ten practitioners. This was important to improve the questions and to test respondents' comprehension and clarity before the actual survey was administered (Yin., 2008). The pilot testing led to the removal of two questions and modification to another one.

The survey questionnaire was distributed to a total of 1500 citizens between the period of August and December 2008. From 1500 questionnaires distributed, 1250 responses were received. Of the 1250 returned and received questionnaires, seventy-one questionnaires were discarded (because the respondents gave more than one answer to a question that expected only one answer) and many questions were unanswered. This meant that the final sample of 1250 questionnaires were used for all subsequent analysis, 1179 usable responses were obtained. The response rate was very good with 83.3% responding. The protocol followed for data collection was as follows. First, one of the researchers approached senior managers and directors

in 15 public agencies¹ in Qatar using his wide network of professional contacts to seek permission and assistance in administering the questionnaire to citizens. Then, the process of distributing and completing of the questionnaire began within the premises of the agencies and was facilitated by the agency staff. As stated before, the questionnaire offered a brief explanation of the purpose of the research to the participants and participation was on a purely voluntary basis. The questionnaires were completed in an environment free from external pressures and at the respondents own pace. The questionnaires were collected after a period of around 15 minutes from the respondents; the respondents completed the questionnaire whilst waiting to complete their tasks within the respective public agency premises. The questionnaire was distributed in English and Arabic languages (for the benefit of those citizens who were not conversant in English).

Data Analysis

To check the responses of the questions, the first stage of the data analysis consisted of checking the responses and tagging them with a unique number. The authors generated the descriptive statistics (percentage and tables) and used Linear Regression analysis by utilising SPSS (Version 15.0). Descriptive data analysis provides the reader with an appreciation of the actual numbers and values, and hence the scale that researchers are dealing with (Dwivedi and Weerakkody, 2007).

ANALYSIS OF THE RESEARCH FINDINGS

Of these 1179 usable respondents, the demographic background is as follows: 36.9% were females while 62.5% were males and 0.6 unanswerd. In terms of education, the majority of respondents (63.2%) hold undergraduate level qualifications degrees, 10.1% hold postgraduate degrees (Masters and PhD) and 26.7% hold equal or below secondary school certificates. In terms of professional backgrounds, 82% were employees in public/private organisations and 18% were university/high school students. As far as age, the results revealed that the majority of respondents (41.1%) were found in the age group of 30-44, followed by the age group of 18-24 constituting around 22%, then age group of 25-29 (20%), and finally the age group of 45-54 with (12.2%) of the total respondents. In contrast, the younger groups (less than 18) and older age groups (greater than 54) consisted together of (4.5%) of the total respondents. Additionally, in terms of nationality, the majority of respondents (58.2 %) are Qatari's and (41.8%) non-Qatari's (please refer back to section 2 for definition of non-Qatari).

In terms of descriptive statistics, the study found that the average scores for respondents' Performance Expectancy was 3.583 and Effort Expectancy was 3.5579, which are both quite high scores. Concerning social influence, the score ranged to 3.547, indicating that the scale is quite high, and the score 3.3627 for Facilitating conditions also indicate a quite high result. Additionally, the last result for Behavioural Intention to Use is 4.19, which again is a high score.

Reliability Test

Cronbach's coefficient alpha values were chosen to examine the internal consistency of the measure (Hinton et al., 2004; and Field, 2005) (table-1). Hinton et al., (2004) have suggested four different points of reliability, excellent ranges (0.90 and above), high (0.70- 0.90), high moderate (0.50-0.70) and low (0.50 and below). The reliability for each construct is illustrated in table-1.

Constructs	Number of items	Cronbach's Alpha (a)
Performance Expectancy	8	.805
Effort Expectancy	5	.829
Social Influence	5	.532
Facilitating Conditions	6	.729

Table-1: Reliability of Measurements

Cronbach's results varied between 0.532 for the social influence and 0.829 for the effort expectancy constructs. The previous mentioned values in table-1 show that some of the constructs got high reliability. The high Cronbach's values of the constructs means that constructs were internally consistent and the reliability is measured of the same construct. Only one

¹ The public agencies included all Qatari municipalities, Health Authorities, Selected Education Institutions, Immigration Authority and the Authority of Traffic and Motoring.

construct, social influence had value of Cronbach alpha coefficient less than 0.70; however, it was considered acceptable for use in this study (Field, 2005).

Table-2 also shows that the correlation is significant to these key factors, Performance expectancy (0.215), and Social influence (0.092), Facilitating conditions (0.144), Gender (0.248), Age (0.252), and Internet experience (0.117). Whereas, other constructs such as Effort expectancy, and behavioural intention were found to be insignificant.

Key Factors		E-government Use Behavior
Performance Expectancy	Pearson Correlation Sig. (2-tailed)	-.215(**) .000
Effort Expectancy	Pearson Correlation Sig. (2-tailed)	.006 .838
Social Influence	Pearson Correlation Sig. (2-tailed)	-.092(**) .004
Facilitating Conditions	Pearson Correlation Sig. (2-tailed)	-.144(**) .000
Behavioural Intention	Pearson Correlation Sig. (2-tailed)	-.044 .142
Gender	Pearson Correlation Sig. (2-tailed)	.248(**) .000
Age	Pearson Correlation Sig. (2-tailed)	-.252(**) .000
Internet Experience	Pearson Correlation Sig. (2-tailed)	-.117(**) .000
** Correlation is significant at the 0.01 level (2-tailed).		

Table-2: Correlations

Regression Analysis: Factors Influencing the Use Of E-government Services.

{F (7, 1179) = 19.124, $p < .001$ } (Table-3). The second significant statistic that was obtained from the analysis is the R^2 , which ranges from 0 to 1, with 1 being a perfect fit model. It was found that $R^2 = 0.143$ for this analysis. This factor explains 14.3% of the changes in the behavioural intention to use e-government services. Other unidentified factors account for the remaining 85.7%. Also, table-3 shows that of all the factors, the following have no significant impact on behavioural intention to use e-government services: Performance Expectancy ($\beta = -0.174$, $p = 0.000$); Effort Expectancy ($\beta = 0.100$, $p = 0.020$); Social influence ($\beta = -0.061$, $p = 0.109$); Facilitating conditions ($\beta = -0.067$, $p = 0.139$); and Behavioural intention ($\beta = 0.019$, $p = 0.614$).

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1	28.507	7	4.072	19.124	.000(a)
Regression			Model		
Model	R	R Square	Adjusted R Square		
1	.378(a)	.143	.136		
Factors		Effecting	E-gov. System Use		
Intention To Use e-government Services Factors			T		
		Beta	Standardised Beta	Statistics	Significance
(Constant)		2.682		15.556	.000
Performance Expectancy		-.161	-.174	-4.091	.000
Effort Expectancy		.104	.100	2.336	.020
Social Influence		-.058	-.061	-1.606	.109
Facilitating Conditions		-.061	-.067	-1.481	.139
Behavioural Intention		.012	.019	.504	.614
Predictors: (Constant), Effort Expectancy, Performance Expectancy, social influence , facilitating conditions, and behavioural Intention to use.					

Dependent Variable: E-government use behaviour.

Table 3: Regression analysis results

DISCUSSION AND CONCLUSION

This paper has discussed the results of a survey targeted towards e-government service citizens in Qatar and it presents a representative account of the citizens' perceptions of the e-government services in Qatar. E-government services are considered critical to the efficient and effective delivery of government services to citizens. In addition, the implementation of e-government will help minimise corruption in public agencies by increasing the transparency of government services. The significant and non-significant factors found in the study and their influences on practice are outlined below.

Significant Factors

Of the adoptions factors, performance expectancy, social influence, Facilitating conditions, gender, age, and internet experience, all had a significant impact on behavioural use of e-government services in Qatar.

Non-Significant Factors

Effort expectancy and behavioural intention were not a significant predictor of the behavioural use of e-government services.

Implications for Practice

Citizens use e-government may benefit from the services and consequently encouraged to adopt e-government. If the government provides more benefits to its citizens in terms of convenient access and prompt services, when compared to the old and traditional means, then possibly this practice might spread the use of e-government services throughout the Qatari society.

Furthermore, the conclusions that have emerged from the analysis presented in this study are as follow:

- Although research exists that explores citizen adoption of e-government services in many countries, the authors argue that currently there is no independent studies that examine e-government adoption in the State of Qatar.
- Three constructs (namely, performance expectancy, social influence, and Facilitating conditions) significantly influenced the behavioural use of citizens for adopting e-government services in Qatar.
- Empirical finding suggests that the effect of the remaining two factors (namely, effort expectancy and behavioural intention to use) on citizens behavioural use of the e-government services in Qatar were non-significant. In majority of developing countries, it is believed that a large number of citizens are still computer and internet untaught. Therefore, the previous factors are likely to be the main influence in minimising the wide spread adoption of e-government services in Qatar.

This research presents an initial attempt towards understanding the adoption of the e-government services in Qatar from citizen's perspective. The e-government services initiative in Qatar has been successful initially in promoting wider access to the Internet. This is encouraging from an e-government perspective. Yet, much more can be done to raise awareness of e-government in Qatar such as advertising and promoting the national e-government website and setting up citizen service centres to assist those who are less-computer-savvy to adapt e-government services. While the research findings are encouraging from a practical perspective for the Qatari government, from a theoretical perspective these results reconfirm that technology acceptance is influenced by key constructs such as Performance Expectancy, Effort Expectancy, Social influence, and Facilitating conditions (factors) of the e-government services used. From a practical perspective however, one has to recognise the fact that although the survey results are encouraging, e-government has yet to mature in the state of Qatar since its inception in 2000. As our survey results reflect, some of the reasons for this can be attributed to the fact that citizens are still not fully aware of e-government services, are concerned about security and some are hindered by the lack of internet access. To the best of our knowledge, this research is the first study that addresses the issue of citizens' adoption of e-government services at a national level in Qatar (by utilizing the UTAUT model) especially with the high sample of number of surveyed citizens. In addition, it can be concluded that this study extends the knowledge in the area of citizens' adoption of e-government applications and services, as it tested the above-mentioned theories.

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