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PERCEPTION OF ELECTRONIC GOVERNMENT UTILIZATION IN STATE OF QATAR

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ABSTRACT

The purpose of this paper is to investigate the perception of the Qatari population concerning their experience in utilizing the electronic government portal in State of Qatar. The focus of the research is to determine factors involved in lack of sufficient usage of the electronic government portal (e-government), lack of efficiency, challenges in improving the services provided, and how e-government portal can best serve citizens of Qatar. This research found five factors are shown to be reliable measurement for characterizing the attitudes towards evaluating Qatar's e-government website. These factors are ease of use, web design, customization, responsiveness, and security. The paper concludes that increasing the level of security for user's payment will increase confidence and facilitate the usage of government services through the web and suggested to include other ministries in the e-government portal to provide other essential services to citizens.

INTRODUCTION

The objective of this research is to investigate the utilization of electronic government (e-government) in state of Qatar, by conducting a survey among various segments of Qatari population, all information collected and analyzed using statistical tools to determine the optimal methods of improving and enhancing the electronic government services in state of Qatar, which has a mission of achieving the highest performance in executing governmental transactions electronically, through streamlined business processes and integrated information technology solutions. Given the efficiency stage of the e-government program in Qatar, the e-government service has not been investigated previously or assessed for its efficiency or its effectiveness. This research is to serve that purpose, and to provide a foundation for measurement of services provided, and to suggest further research on the topic. The statistical analyses used in this study were the descriptive statistics which is numerically summarizes important characteristics of set of numbers, and the correlation coefficient statistics, which is a measure of the closeness of the relationship or association between independent and dependent variables. These two statistical tools were viewed to be appropriate for this kind of study to highlight if any significant correlation between different variables of the study. This research concludes that there is a direct relationship between level of education, work sector, age category, and nationality variables and the utilization of e-government portal. However, there is no significant relationship between the gender, marital status and monthly income variables and the utilization of e-government portal. At the end of this research these is a number of suggestions and recommendations for the Qatar's e-government decision makers to improve the quality of e-government services in order to increase its utilization.

LITERATURE REVIEW

Previous research described e-government differently; Bourn (2001) asserts that the concept of e-government combines electronic information based services for citizens (e-administration) with the collaboration of participatory elements (e-democracy) to achieve the objective of balanced e-government. The state or individual local authority institutions grant citizens more opportunities to influence public life by making their views known electronically. At the same time, the Internet allows the public sector to extend its role as a client-oriented service provider. The characteristic feature of 'correct' e-government shall be balanced combination of electronic services and forms of electronic participation. [Heeks \(2001\)](#) suggested that e-government can develop the strategic connections between public sector organizations, and improve a communication between government levels. This connection and communication improve the co-operation between them through facilitating the implementation of the government strategies,

transactions, policies, better use and running of government processes, information, and resources. McClure (2000) recommended that through an integrated web-portal, it will be possible for citizens and businesses to complete a transaction with government agencies without having to visit several separate ministries and departments in separate physical locations. In addition, e-government strategy is enabling public sector organizations to interact directly and work better with citizens and businesses. This includes digitizing procurement services from and to business in order to improve their service quality, convenience, and cost effectiveness. On the other hand, Sharma (2002) argued that e-government portals require a common and integrated architecture framework that allows different organizations, regions, and towns to share and exchange data independent of formats, devices and underlying architecture. Therefore, government organization must have a clear understanding of architecture frameworks from both the technical and information management levels. Haldenwang (2004) makes the argument that e-government denotes the strategic, co-ordinate use of information and communication technologies (ICT) in public administration and political decision-making institutions. The benefits are expected to deliver greater efficiency to concerned institutions, improvements in public services, political participation and transparency. Beyond the immediate benefits of the new technologies, Haldenwang (2004) advised that e-government should be taken as a tool to promote good governance and to strengthen reform-oriented factors in policies and civil society. Berkley and Gupta (1994) explore that the advantages of e-government lie in the improved quality of the services provided to citizens' enterprises, and greater efficiency for all participants.

The level of satisfaction among the citizens as well as the acceptance of the public sector shall also increase. Berkley and Gupta (1994) also indicates that an international standard for the development and introduction of e-government does not exist. It is, still, possible to identify key principles which an e-government strategy must satisfy. Above all, there is a need for the establishment of a central, responsible authority as well as a need for long-term planning. According to a study conducted by West (2003) on global e-government of 2,166 national government websites in 198 countries around the world, while most of the government websites offer primarily informational content, only 16% offer services that are fully executable online. West (2003) found that the country with the largest number of online services was Singapore, with an average of 7.8 services across its government agencies. This was followed by US (4.8 services), Turkey (3.2 services), Hong Kong (3.1 services), and Taiwan (2.4 services). It is interesting to note that many of the countries in which e-government is the most developed are those that were considered developing countries only few decades ago. Layne (2001) describes a four stage model to develop a fully functional e-government. The model is based on technical, organizational and managerial feasibilities. Layne research suggested that e-government is an evolutionary experience, and posits four stages growth model for e-government that consist of; (1) cataloguing, (2) transaction, (3) vertical integration, and (4) horizontal integration. The four stages are arranged in terms of complexity and different levels of integration. Furthermore, James (2003) measures the benefits of e-government in terms of citizen's benefits and he concludes that the creation and use of an e-government capability leads to several benefits that embraces lower cost channels of communication with citizens and businesses, increase resources efficiency, increase in profits and wider economic benefit, advance internal and business procedure, and reduce intricacy. Seifert (2003) outlines some of the major opportunities to enhance governance, which includes efficiency in term of reducing errors and cost, new services, increased citizens participation, and enhanced national information infrastructure. Moreover, Seifert (2003) presented the challenges to implementing e-governance, which comprises of adequate information delivery, privacy, inconsistencies in computer access, management, and funding requirements. Lau (2003) on the other hand agrees with Seifert (2003) as he asserts some factors that affect the willingness of citizens to use electronic services. These factors are; 1) the availability of the technological tools, 2) the level of access that citizens will have, 3) citizens trust in electronic channels, and 4) their expectation of the types of services that should be delivered and how it should be delivered. Consumer's perception of e-government issues in Arab countries is consistent in some areas and inconsistent with other development countries. Malawian (2002) shows that technical and customer's issues, such as Internet security, speed of service, customer's trust, awareness, and the knowledge of how to use the service were the most important issues. Malawian (2002) observed that there is not enough attention given to investigating the nature of Arab consumers' perceptions and feelings towards e-government. Several suggestions to improve using e-government in Arab countries were outlines by Malawian (2002). These includes; developing the basic internet infrastructures, prepare the legal environment to deal with e-government, design an educational and training plans that aims to prepare a qualified technical employees

to support e-government, and implementing appropriate public awareness programs for using the e-government services.

RESEARCH METHODOLOGY

This study is based on data collection from a random sample of people in Qatar, however, an exploratory, descriptive and causal research method were also used. In this research, the first stage was exploratory research design method to provide insights and understanding of the research problem and some interviews with the decision maker in Supreme Council for Telecommunication and Information Technology (ICTQatar) e-government department. Then the result of the exploratory research and the interviews were used as input to the second stage, which includes both descriptive and causal research design. During the second stage a survey was developed that consisted of three parts to test the different hypotheses that were designed in the first stage. In addition the relationship between the different variables that affect using e-government website in Qatar including ease of use, web design, responsiveness, customization and security, were examined in order to help e-government managers to evaluate and determine the right decision and to continually improve. Finally the causal research design was implemented to establish cause and affect relationships. Moreover, the influences of one or more of the independent variables to the other dependent variables were verified. The data collection method followed in this study consists of secondary data analysis and interview with ICTQatar to understand the e-government point of view regarding using e-government in Qatar. The second method is a survey that was distributed to 180 persons from demographic variables (age, nationality, level of education...etc). The survey was in both Arabic and English language. However, 10 of the distributed surveys were blanks or incomplete, thus it was not used in the analysis, and 15 cases of the completed questionnaires were found to be unusable because of missing responses. These missing response were ignored, which lead to 155 usable responses. Data collected from the survey was entered into statistical analysis software 'SPSS', which is used to run a variety of statistical analysis for academic use.

ANALYSIS

Descriptive analysis

Finding of statistical analysis discussed below. All tables and analysis attempt to answer the research questions. Descriptive statistic such as minimum, maximum, mean, standard deviation, rang and variance was obtained for all the dependent and independent variables. Another type of descriptive analysis is Crosstabs which is used for showing the frequency and percentage of values that are present (non-missing) and the percentage of missing values for each category as related to the other variables. Table 1, presents the frequencies of general part variables such as, computer usage, e-government usage, reasons of not using e-government, period of using e-government, and the most services used in e-government portal. A typical user was found to be one who used the computer several times a day, accessed the e-government portal less than once a month, and utilized the e-government portal since less than a year, tended to use Traffic Violations. Finding from the statistics of general variables show that about 33.5% of people are using the computer several times a day, but in the same time about 32% of those people are accessing the e-government website less than once a month. There were many people who did not use the e-government website for different reasons. However, the most frequent reason was not familiarity with the e-government services, which supports the statistical result that indicates that most of the people know about the e-government since less than a year. The last variable in the general part point out that the traffic violations is the most used services in Qatar's e-government website.

Table 1
Frequency Table of the General Part of the Survey

Computer Usage	Frequency	Percent	Cumulative %
less than once a month	17	11.0	11.0
Once a month	13	8.4	19.4
A few times a month	18	11.6	31.0
A few times a week	23	14.8	45.8
About once a day	32	20.6	66.5
Several times a day	52	33.5	100.0

E-gov Usage			
less than once a month	51	32.9	38.1
Once a month	25	16.1	56.7
A few times a month	28	18.1	77.6
A few times a week	19	12.3	91.8
About once a day	11	7.1	100.0
Reasons of not using e-gov			
e-service is not attractive	2	1.3	9.5
Difficult to access	1	0.6	14.3
No security	3	1.9	28.6
Services I need are not provided	2	1.3	38.1
Not familiar with it	7	4.5	71.4
Not interested in it	5	3.2	95.2
Other	1	0.6	100.0
Period of using e-gov			
Less than a year	56	36.1	37.8
Between 1-2 years	35	22.6	61.5
Between 2-3 years	24	15.5	77.7
Between 3-4 years	18	11.6	89.9
Between 4-5 years	11	7.1	97.3
More than 5 years	4	2.6	100.0
Most Services Use			
Visit Visa	15	9.7	10.1
Driving License	10	6.5	16.9
Traffic Violations	40	25.8	43.9
Electricity & Water	16	10.3	54.7
Resident Permits	16	10.3	65.5
Student Registration	8	5.2	70.9
Zakat Fund	15	9.7	81.1
Qatari Employment	10	6.5	87.8
Health Cards	10	6.5	94.6
Red Crescent Funds	6	3.9	98.6
Others	2	1.3	100.0

Table 2 summaries the variables that determine the dimensions of e-government website, demonstrate that 60.8% agreed on that the government website is ease to use and navigate, 15.5% were strongly agreed, 3% disagreed, and 2.4 % strongly disagreed and 13.7% are not decided. Regarding the web design, 54% agrees on its efficiency that's means the content information is attractive, well organized and the instruction is ease to follow, 4.5% strongly agreed, 10.3% disagreed, 3.9 % strongly disagreed and 22.8 not decided. Testing the responsiveness variables shows that only 27.4% agreed that the e-government reply and response to their request, 5.5% strongly agreed, 21.9% disagreed, 3.9% strongly disagreed and 36.8% not decided. Examining the customization factor in e-government website, shows that only 36% of people were agreed on that e-government portal provides them with their personal needs and most of the needed services are exists in the website, 4.3% strongly agreed, 26.2% disagreed 3.4% strongly disagreed and 29% not decided. The last factor is the security, only 33.1% agreed about the security of e-government website which includes the e-payments and secured the private information, 9% strongly agreed, 22.6% disagreed, 3.7% strongly disagreed and 27.1% undecided.

Table 2
Frequency Table of the Dimensions of E-government Website

Easy of use				
	Frequency	Percent	Cumulative %	Mean
Strongly disagree	4	2.4	1.4	
Disagree	5	3.0	5.4	

Undecided	21	13.7	12.8	3.9
Agree	94	60.8	81.8	
Strongly Agree	24	15.5	100.0	
Web design				
Strongly disagree	6	3.9	2.7	3.5
Disagree	16	10.3	14.9	
Undecided	35	22.8	39.2	
Agree	84	54.0	96.6	
Strongly Agree	7	4.5	100.0	
Responsiveness				
Strongly disagree	6	3.9	3.4	3.0
Disagree	34	21.9	5.4	
Undecided	57	36.8	25.0	
Agree	43	27.4	85.1	
Strongly Agree	9	5.5	100.0	
Customization				
Strongly disagree	5	3.4	4.7	3.1
Disagree	41	26.2	16.9	
Undecided	45	29.0	39.2	
Agree	57	36.6	95.9	
Strongly Agree	7	4.3	100.0	
Security				
Strongly disagree	6	3.7	4.1	3.0
Disagree	35	22.6	14.9	
Undecided	42	27.1	42.6	
Agree	51	33.1	96.6	
Strongly Agree	14	9.0	100.0	

Correlation analysis

Table 3 lists the correlation between key variables. In particular, it shows correlation between the e-government website variables which includes security, ease of use, web design, customization, and responsiveness with the demographic variables such as nationality, age category, gender, and marital status, level of education, work sector and monthly income.

Table 3
Correlation Analysis between Selected Variables

	Nationality	Age Category	Gender	Marital Status	Level of Education	Work Sector	Monthly Income
Easy Access	-0.151	0.072	0.130	0.016	-0.148	0.012	-0.120
User Friendly	-0.151	0.031	0.151	0.016	-.170(*)	-0.021	-0.106
Easy Navigation	-.162(*)	0.000	0.074	0.005	-.195(*)	-0.072	-0.064
Information Attractive	-0.099	0.022	-.236(**)	0.054	-.257(**)	-0.008	-0.079
Information well	-0.121	-0.042	-0.041	0.087	-.253(**)	-0.035	-0.052

organized							
Information easy to understand	-0.215(**)	-0.107	-0.106	-0.016	-0.329(**)	-0.215(**)	-0.107
Easy Contact	0.099	-0.260(**)	-0.095	-0.392(**)	-0.083	0.024	-0.119
E-gov is prompt in replying	0.006	-0.244(**)	-0.102	-0.321(**)	-0.153	-0.001	-0.144
Meet personal needs	0.078	-0.070	0.071	-0.031	-0.257(**)	0.080	-0.228(**)
Meet needs	0.085	-0.151	0.115	-0.019	-0.293(**)	-0.074	-0.170(*)
Most services are provided	-0.009	-0.168(*)	0.028	0.143	-0.241(**)	-0.051	-0.247(**)
Secure e-payments	-0.014	0.145	0.054	0.103	-0.046	-0.241(**)	-0.204(*)
Secure private information	-0.087	0.076	0.071	0.082	-0.154	-0.260(**)	-0.263(**)
E-gov truthful	-0.072	0.010	0.134	-0.049	-0.130	-0.225(**)	-0.232(**)

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Although the responses had been analyzed using frequencies, it is worthwhile to look at correlation coefficient between these variables to investigate their relationships and how they are related to each other. Results indicated that the computer usage, owning computer, and e-government usage have no relationship with e-government website variable (ease of use, web design, customization, responsiveness, and security). However, Pearson's correlation test has shown a negative relationship between work sectors and security variables as $r = -.241, -.260, -.225$. It is believed that most people who work in the banking sector tends to agree the most that e-government portal is secured in term of e-payments and securing private information in comparison to the service sectors. This is most likely due to the fact that most financial transaction are electronically based and therefore employees with banking experience are more likely to utilize electronic payments, while the service sector includes broad range of services that may not utilize electronic payments, which cause employees in the service sector to be less receptive to electronic payment. Moreover, Pearson's correlation test has exposed a relationship between level of education and other variables as listed in Table 4 (easy to access, web design, and customization) as $r = -.195, -.329, -.241$. Such a correlation has confirmed that education level has more impact on electronic government services usage because they pose the knowledge and the ability to use e-government website. On the other hand, the same group tends to show low satisfaction rate towards the efficiency of e-government website regarding the responsiveness and security. This reflects their level of knowledge and understanding of the services provided by e-government. Further analysis shows that people within the age range of 20 to 30 years old use the e-government services the most as $r = -.260$. This is more likely attributed to the technical knowledge and computing ability, time they spend online, and the belief that it is an effective way of achieving results. Furthermore, the results of correlation tests have indicated that employed people are more likely to use e-government website. This is probably because they are more likely to have access to the internet at their workplace and/or homes. In addition, statistical results show that there is significance between the nationality and other variables, which illustrate those Qatari nationals, are more prefer to use the e-government website more than non-Qatari. Also, by analyzing the gender variable, statistics show that males feel that the e-government website design is more attractive than the females.

DISCUSSION

This research has identified five factors that are shown to be reliable measurement for characterizing the attitudes towards evaluating Qatar's e-government website. These factors are easy to use, web design, customization, responsiveness, and security. Finding in this research suggests that the majority of the

population sample were satisfied with e-government' web design and the ease of use. However, there were variations in response to the needs that the e-government portal provides. There is a lack of usage of e-government portal due to the persuasion that e-government portal is unsecured. Another finding of this research is that there is insufficient service to citizens in term of response to inquiries and replies, which contribute to the lack of usage of e-government portal. Furthermore, there is no significant relationship between the gender variable and utilization of e-government portal, also there is no significant relationship between the marital status variable and utilization of e-government portal, and there is no significant relationship between the monthly income variable and utilization of e-government portal. On the other hand, there is a relationship between educational level and the utilization of e-government portal. In addition, there is a relationship between age category and the utilization of e-government portal, and there is a relationship between work sector and the utilization of e-government portal. Also, there is a relationship between educational level and the utilization of e-government portal. The findings of this research confirms the hypotheses that electronic government is inefficient in delivery of the needed services to the Qatari population and further improvements are needed based on these findings. This research suggests that Qatar's e-government authority can attract and increase the utilization of e-government portal by establishing a big marketing campaign that includes all the benefits of e-government portal. In addition, improve the quality of some existing services to be fully accomplished via electronic channels. Furthermore, increasing the security level for user's payment will increase confidence and facilitate the usage of government services through the web. Also try to co-operate with other ministries to provide other necessary services. This research has lead to some recommendations for future research. First of all, further research is needed to include the provider (Ministry's IT managers and e-government's designers) point of view. Next, future research can be done by comparison between users and provider's perception to examine the efficiency of e-government portal. Another comparison research can be done between Qatar and other GCC or Arab e-governments.

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