THE RELATIONSHIP BETWEEN E-GOVERNMENT SYSTEM AND GOVERNMENT OPERATION EXCELLENCE IN THE SULTANATE OF OMAN

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UNIVERSITI UTARA MALAYSIA
JULY 2016

THE RELATIONSHIP BETWEEN E-GOVERNMENT SYSTEM AND GOVERNMENT OPERATION EXCELLENCE IN THE SULTANATE OF OMAN

By

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Thesis Submitted to
School of Technology Management and Logistics
University Utara Malaysia,
in Fulfillment of the Requirements for the Degree of Doctor of Philosophy

Kolej Perniagaan
(College of Business)
Universiti Utara Malaysia

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THE RELATIONSHIP BETWEEN GOVERNMENT OPERATION EXCELLENCE AND E-GOVERNMENT SYSTEM IN SULTANATE OF OMAN.

Program Pengajian : **Doctor of Philosophy**
(Programme of Study)

Nama Penyelia/Penyelia-penyelia : **Assoc. Prof. Dr. Norlena Hasnan**
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ABSTRACT

Every government is seeking to provide the best services to demonstrate efficiency and excellence of performance. This goal could be achieved by improving the service performance of entire sectors in society. The government of Sultanate of Oman has realized the importance of moving towards information technology. Therefore, e-Government initiatives were launched in Oman as a part of overall country information technology in 1998. It was first established under the name "Digital Oman". Every government sector has since upgraded the performance by having its own websites and e-services application. However, there are gaps and loose connections exist among the sectors, which has consequently tarnished the image of Omani E-government. This has led to important questions about the requirement of modification and improvement of such service. Hence, the purpose of this research is to investigate and explore the factors that drive the e-government implementation and affect the government performance as well as the government-citizen relationship in Sultanate of Oman. A survey was conducted among Omani citizens in order to have their feedback and overview of the current e-government in the Sultanate, their technological and behavioral intention in using the e-government system and the governmental operation excellence (GOE) of the system. The outcomes of the study indicate that the e-government system has a direct effect towards GOE. The 'technology intention to use' is found to have a mediating effect, while the 'behavioral intention to use' has a partially mediating effect on the e-government project approach from citizen's point of view. The study outcomes should offer guidance to conduct e-government projects, especially for the policy makers in the Sultanate of Oman for future researchers. It also can provide a foundation for future researches related to the issues of the government-citizen relationship.

Keywords: e-government, government-citizen relationship, digital oman.

ABSTRAK

Setiap kerajaan sentiasa berusaha untuk memberikankan perkhidmatan yang terbaik dengan mempamerkan kecekapan dan prestasi kecemerlangan. Matlamat ini dapat dicapai dengan meningkatkan prestasi perkhidmatan bagi keseluruhan sektor dalam kemasyarakatan. Kerajaan Kesultanan Oman sedar akan kepentingan era informasi terkini. Justeru itu, pada tahun 1998, e-Kerajaan telah dilancarkan di Oman sebagai sebahagian daripada inisiatif keseluruhan teknologi maklumat negara. Ia telah dilancarkan dengan nama "Digital Oman". Setiap sektor kerajaan telah menaik taraf prestasi dengan memiliki laman web sendiri dan aplikasi e-perkhidmatan. Walaubagaimanapun, wujud jurang dan hubungan yang longgar di antara sektor kerajaan, yang boleh mencemarkan imej e-kerajaan Oman. Ini telah membawa kepada persoalan besar tentang keperluan pengubahsuaian dan penambahbaikan perkhidmatan tersebut. Oleh yang demikian, kajian ini bertujuan untuk menyelidik dan meneroka faktor-faktor yang mendorong pelaksanaan e-kerajaan yang akan memberi kesan kepada prestasi kerajaan serta hubungan kerajaan dengan rakyat di Kesultanan Oman. Satu kajian telah dijalankan di kalangan rakyat awam untuk memperoleh maklumbalas dan pendapat mereka terhadap e-kerajaan di Oman, kepekaan teknologi dan kecenderungan mereka dalam penggunaan sistem e-kerajaan dan kecemerlangan operasi kerajaan (KOK). Keputusan kajian menunjukkan sistem e-kerajaan mempunyai kesan langsung terhadap KOK. “Kepenggunaan teknologi” didapati mempunyai kesan mediasi, manakala “kesanggupan untuk menggunakan” mempunyai sebahagian kesan mediasi dalam pendekatan projek e-kerajaan. Hasil kajian boleh dijadikan sebagai panduan dalam menjalankan projek-projek e-kerajaan, terutamanya dalam penggubalan dasar-dasar kerajaan di Kesultanan Oman. Ia juga boleh dijadikan asas dalam penyelidikan yang berkaitan dengan isu-isu kemasyarakatan sesebuah negara di masa akan datang.

Katakunci: e-kerajaan, hubungan kerajaan-rakyat, digital oman

ACKNOWLEDGEMENT

First and most, I am very grateful to Allah for providing me the power, strength and inspirations required for carrying out this complete study.

I would like also to extend my appreciation to my two supervisors, Prof. Dr. Shahimi Mohtar and Associate Prof. Dr. Norlena binti Hasnan, for their thorough supervision, patience, encouragement and willingness in supporting me throughout this complete study. For them, I would like to express my high sincere gratitude for their guidance and enthusiasm. The completion of this study would not have been possible without their guidance and help.

Finally, I wish to dedicate this complete study to my family as they have always been my strongest supporters throughout the complete study period. I am indebted to all my family members for their love and appreciation during my study period.

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E-Government	Electronic government
G2B	Government-to-Business
G2C	Government-to-Citizens
G2E	Government-to-Employees
G2G	Government-to-Government
ICT	Information and Communication Technology
IT	Information Technology
ITA	Information Technology Authority
SCT	Social Cognitive Theory
TAM	Technology Acceptance Model
TTF	Technology Task Fit

CHAPTER ONE

INTRODUCTION

1.1 Research Background

In recent years, Internet and Information Technology growth has been the main driver and catalyst for the demand of change in most of the business and service sectors in the world. New technologies and concepts have therefore changed government interaction with business, agencies, organizations and citizens (Lee, 2010; Rokhman, 2011) by establishing new service styles, such as: e-banking, e-commerce, e-voting and others. Digital government or electronic government has been popularized with the term e-government. This refers to the government services provided to citizens through new IT technologies to make provision faster and easier. It was first initiated in the end of 1990s and it is considered as on innovation brought by technological progress from Information Technology growth (Grönlund and Horan, 2005).

Every government is seeking to provide the best services to its country to achieve efficiency and accepted performance. This goal could be achieved by improving the service performance of entire sectors in society. Billions of dollars have been invested by governments in order to undertake their first step towards implementing e-government projects and to implement the best methodology of all attached and correlated electronic-based services like: e-payment, website, e-system, e-application and others. This will permit new channels of interaction and communication between different government sectors and between government and business organizations. This interaction will lead to

improvement in government performance and efficiency while interacting with the main and the most important category of this project which are customers. Specifically, customers from the e-government and government point of view are citizens. Most scholars have divided e-government into three main categories which are: Government to Government (G2G), Government to Citizens (G2C) and Government to Business (G2B) (Fang, 2002) and some scholars have invented a fourth category which is Government to Employee (G2E) (Bertot et.al 2008; Carter and Belanger, 2004) but none of the scholars has explored the interaction between the other categories beyond the Government category as they consider them to be the e-commerce part of the e-government. For example, Business to Citizen (B2C), Business to Employee (B2E) and Employee to Citizen (E2C) are not yet identified in the e-government system.

Moving towards e-Government would give many advantages to a country's style of service, along with budget usage and controlling. Indeed, it would enhance the operation of the government in many aspects for the betterment of Government Operation Excellence (GOE). Some of these advantages are reducing costs and increasing interest due to the reduction of printed paper and acquisition of files and space for storage (Tolbert and Mossberger, 2006; Helbig, Gil-Grcia & Ferro, 2009; Sharma, Govindaluri and Sharma, 2013). Reducing the work load on employees is another benefit to the work environment because employees will be in contact with the minimum number of citizens and this will create a better and calmer work environment. E-Government will benefit rural areas along with big cities because citizens can apply for services as long as they are part of the country and in some cases and services, citizens may apply for and request a

service while they are abroad. Other benefits to the environment, knowledge, etc. could also be counted for the betterment of the country (Huang and Bwoma, 2003) but, e-government also has some challenges and disadvantages and these should not be forgotten or ignored. Some of these disadvantages are illustrated under hyper-surveillance, cost, inaccessibility, loss of transparency and accountability (Bertot, Jaeger and Grimes, 2010; Al Zahrani, 2011). Hyper-surveillance, affects the security of data in terms of citizen's personal information and government information while the capital cost required for the e-government project will be initially high when establishing the systems and structure, but after that the operation cost will be low. This is the reason why most companies and countries favor the old system. Also, customers prefer direct communication.

G2C implementation challenges towards GOE will play a key role in terms of technology and behavioral intentions. This challenge will reflect and directly affect the GOE and especially the government-citizen relationship. In Oman, there are many technological aspects that affect G2C like internet coverage, internet quality, citizens' technological knowledge and the availability of technology. On the other hand, some behavioral aspects are also available, like trust in government and trust in technology (Ayyash, Ahmad and Singh, 2011).

The government of the Sultanate of Oman has realized the importance of moving towards the information century. His Majesty Al Sultan Qaboos Bin Said had spoken about the

importance of adopting and using the new technology in Omani daily life on 11th Nov 2008 and he said,

"*Information technology and communications have now become the main elements that move forward the development process in this third millennium … We call upon all government institutions to speedily enhance their performance, and to facilitate their services, by applying digital technology in order to usher the Sultanate into the constantly evolving spheres for applying knowledge.*" (ITA, 2010, p.5)

As a response to His Majesty's speech, the Oman Government decided to boost up the process of initiating e-government. The e-Government initiatives were launched in Oman as a part of an overall country information technology initiative in 1998 (Abanumy, Al-Badi and Mayhew, 2003). It was first established under the name "Oman Digital". Using Information and Communication Technology (ICT) as a platform for delivering and offering services was established by the Information Technology Authority (ITA) with the following desired outcomes, namely faster and better government services for both businesses and citizens, more effective and efficient government and better optimization of investments and resources (ITA, 2010)

Al-Busaidy and Weerakkody (2010) stated that every government sector in Sultanate of Oman has its own website and its own services and e-services. Nevertheless, not all of the government sectors in Oman have these e-services. This fact introduces a gap and a lack of interconnection between them and yet not all of the government sectors have initiated electronic services or applications to date (Al-Busaidy and Weerakkody, 2010).

One example of the internal interconnection of each government sector is the housing ministry which has many sectors and offices in each region but in order for the citizen to finish registering purchased or sold land both buyer and seller must go to the office in the region where the land is located in order to complete this process. For the external connection between different ministries one example is that for any service that involves more than one ministry, the citizen must take it manually between them, owing to miss-connection between them in services and e-services. The real situation in the Sultanate of Oman is that some government offices have their own website, yet have limited ability to download forms and process online requests. In addition, the service integration and connection between different government agencies has not yet been established (Al-Busaidy and El-Haddadeh, 2011). Although that this initiation was established long ago, the same system is still valid and this raises questions about the requirement of modification and improvement of such services.

1.2 Problem Statement

Generally, the term e-government has been described differently according to the perspectives of the scholar. For instance, the term has been defined from the perspectives of the government (Silcock, 2001), service style (Fang, 2002), citizen (Leitold et al., 2002) and business (Al Zahrani, 2011). While other definitions consider information technology (IT) (Dpepa, 2001; Moon, 2002; Dawes, 2002). Moreover, due to the very fast innovations and inventions especially in the IT and ICT technologies, variations have appeared between old and new models and classifications in terms of conducted models, types, classifications, technology and behavior along with the definition. These variations exist due to many aspects, examples are different scholars' backgrounds, majors, points

of view, fast technology innovations and the different culture of different regions and countries. There is therefore a need to explore further in order to obtain a better understanding of e-Government and to be able to have a balanced view of the concepts all under one system.

Numerous studies have been conducted and have emphasized the G2C category which specifically addressed the acceptance of citizens towards e-government and how to enhance this acceptance as much as possible (Schaupp and Carter, 2005; Carter and Belanger, 2004; Lean et al., 2009). Meanwhile other scholars like Phang et al. (2005); Al-Zahrani (2011) and Al-Zu'bi (2012) investigated the acceptance of technology from citizen's point of view. This illustrates the importance and the rise of interest from scholars towards citizens and their contribution to e-government processes and projects. E-government services are taking akey place in the infrastructure in developing countries such as the Sultanate of Oman (Sharma, Govindaluri and Sharma, 2013). Unger & Dougherty (2013) argued that e-government is considered and counted as an important government improvement strategy and is a leading aspect of many governmental reforms. However, there is delay in the improvement rate especially in developing countries (Al-Busaidy and Weerakkody, 2010). This delay is due to many aspects, for example corruption, weak financial planning, lack of good governance, shortage of knowledge and availability of technology, weakness in investment and the most critical is the lack in trust in government-citizen relationship (Cable, 2013; Alaaraj and Ibrahim, 2014). There are many factors that prevent citizens accepting the new style of service especially in the social behavioral prospective such as social norms, core faith and attitudes that determine

the way people act. However, the social behavioral factors that seem to be the main influence on citizen acceptance were not included in those studies (Al-Busaidy 2011; Cable, 2013; Alaaraj and Ibrahim, 2014; Alaaraj and Hassan, 2014; Alaaraj, 2015).

Al Zahrani (2011) discussed many factors which affect citizen acceptance of the new technology like attitude, social control and trust. However, illustrating the citizen acceptance from the aspect of technology was not thoroughly discussed especially in areas like citizen-centricity, facilitating conditions, effort expectancy and performance expectancy. Therefore, it is crucial to study the citizen acceptance issue from the side of technology as well as from the social behavioral side.

Alshawi and Alalwany (2009) indicated that there is an urgent requirement to address the lack of effectiveness of e-government services in developing countries since the rate of services via e-government is very low. Moreover, most of the e-government strategies adopted and the citizen interaction models differ from one country to another and they are mostly valid in western ones. Al-Busaidy (2011) stated that the e-government system in the Sultanate of Oman still needs improvement in terms of internet quality, government-citizen relationship and the integration of government agencies within the country in order to help both citizens and government to increase performance and to work in a more appropriate and efficient way. Although the Sultanate of Oman has invested heavily in development and diffusion of e-Government over the last years, adoption has still not been up to the desired level due to some aspects like: limited internet access and low ownership of computers. Hence, other means need to be found in order to achieve

successful e-Government in the Sultanate (Al-Hadidi and Rezgui, 2010). The lack of a legal framework that would identify specific guidelines and regulations regarding electronic data usage as governmental support in facilitating conditions is one of the main limitations of the concept of e-government in Oman. Furthermore, the Omani government has to provide new laws to regulate and control the Internet, which will basically control the relations between the service providers (Omantel and Ooredoo through TRA) and users (public citizens and different organizations). Additionally, usability and information quality factors are affecting the e-government implementation efficiency in Oman (Abanumy, Al-Badi and Mayhew, 2005) and it should not be forgotten that these services and systems must serve all kinds of citizens. Hence, it should be a citizen-centric system specified for citizens' desire and responsive to their needs. On the other hand, IT infrastructure is essential in developing websites and it requires a complete system approach with a service delivery which forces the government to invest more in this subject (Omari, 2013). The current e-government situation in Oman is that some of the ministries and government agencies have their own websites that allow citizens to check for required information and to download or upload forms and requests. However, the service flow, internally within the ministry along with externally from one ministry to other ministries is not friendly to users. This requires citizens to keep contacting the ministry in order to check the service request situation and also to take it to the other agency or ministry or, if required, to finish the progress there until the service completed. Weerakkody, Janssen and Dwivedi (2011) illustrated that the majority of citizens and businesses in different countries which are using e-government still have to deal with multiple different public organizations. Therefore, these organizations need to

collaborate with each other and it is no longer possible to operate in isolation. Moreover, governments should provide coherence between various administrative government units and agencies so that they work to complement and complete each other in one combined connected system (Al-Khouri and Bachlaghem, 2011).

Another issue in the current e-government situation in Oman is observed in an empirical study conducted by Ashrafi and Murtaza (2011). This was about knowledge of services and benefits that government is providing using ICT (e-government) and the results show that only few of those sampled had has knowledge about it. This indicates that there is a huge gap in marketing services and in the delivery of services. Moreover, Al-Azri, Al-Salti and Al-Karaghouli (2010) conducted qualitative research by conducting interviews in Sultanate of Oman. Most of the interviewees stated that the E-government initiative services have to be marketed aggressively to end users. On the other hand, the accessibility of web along with the integration and connectivity of various government agencies was considered as one of the major factors that affect the e-government development in the Sultanate (Al-Busaid and Weerakkody, 2011; Sarrayrih and Sriram, 2015).

Based on above discussion and observations, it is important to investigate further the gap and the relations between different parameters that affect government operation excellence (GOE) and e-government.

1.3 Research Questions

Based on the study background and the problem statement discussed in the preceding section, the research questions that the study attempts to address are as below:

- What is the relationship between the e-government application system and Government Operation Excellence (GOE)?
- What is the relationship between the e-government application system and Government Operation Excellence (GOE) with the (moderating) effect of technological intention to use?
- What is the relationship between the e-government application system and Government Operation Excellence (GOE) with the (moderating) effect of behavioral intention to use?

1.4 Research Objectives

Subsequent to the above research questions, the study was dedicated to achieve the following objectives:

- To investigate the relationship between the e-government application system and Government Operation Excellence (GOE)
- To investigate the relationship between the e-government application system and Government Operation Excellence (GOE) with the (moderating) effect of technological intention to use

- To investigate the relationship between the e-government application system and Government Operation Excellence (GOE) with (moderating) the effect of behavioral intention to use

1.5 The Significance of the Study

E-government is counted as an increasing application area specifically in the IT domain. Ho (2002) illustrated that there is an important benefit while using e-government services which is that it helps to obtain information about new different business opportunities online. Citizens are the main drivers of governmental service style and obtaining good relations with the best satisfaction will keep the complete service cycle healthy. Furthermore, an understanding of the applications type that would support e-government usage can provide general input to promote more of the services to the different variables attached to the online system (Zhao et al., 2008). In this respect, this research provides some important information and guidelines into the field of G2C government-citizen relationship. From a practitioner‘s perspective, it gives correspondent developers information and knowledge on what different features, methodologies and tools are most useful for a G2C platform. In order to generalize the aspect, the approaches to depict initiatives of e-government towards citizens are mainly furnished as e-government adoption in a single dimension.

In general, the purpose of this research is to investigate and explore the factors that drive the e-government implementation and adoption that would affect the government performance as well as the government-citizen relationship attached to the current e-

government adoption status in Sultanate of Oman. As pointed out by Wood-Harper, Ibrahim, and Ithnin (2004), investigating the different available factors that contribute to the e-government success of services is essential as countries still continue to face challenges in e-government implementation and adoption.

This study hopes to provide e-government adoption information to the Omani government for the benefit of improving of future policy planning. Indeed, the knowledge from this study and Omanis experience in the implementation of e-government could also be used by other neighbor nations or nations with similar characteristics aiming to embark on similar initiatives. Similarly, this study could benefit e-government consultants, as well as e-government service vendors in designing and developing enhancement solutions for e-government service effectiveness and efficiency that will drive e-government uptake among different attached variables, and specifically among the government-citizen relationship from the G2C side (Al Zu'bi, 2012).

The findings and outputs of this study will therefore help to furnish information to contribute to the knowledge on the practices of G2C e-government in the Gulf countries, Arab Countries, Middle East countries and specifically, for government-citizen relationships in Sultanate of Oman. The findings of the study may also be beneficial for Omani policy makers such as The Information Technology Authority (ITA) for future planning and for the upgrading of e-government. By understanding the adoption of e-government along with the factors associated with the usage and the reasons behind the e-government applications rejection by different associated variables, especially citizens,

appropriate measures, guidelines, methodologies and incentives can be drafted to encourage e-government adoption among citizens. This would enhance the government-citizen relationship.

1.6 Scope of the Study

The scope of this study of e-government is limited to the citizen's intention and acceptance of the new service approach along with the best practices that would enhance this acceptance and intention. Generally, the study focuses more on the citizen-government relationship using the e-government service approach.

In this study, G2C adaption in e-government receives the main focus because they are the main driver and targeted customers of the complete project. Investigating the main drivers in terms of technology and social behavior that would enhances and empowers the citizen-government relationship to increase the operational excellence of the e-government service methodology supplied by the government is an essential part of the thesis. Citizens' behavior against and towards the new service methodology directly affects the success of the entire project.

The main targeted citizens are aged between 18 to 60 years old because in the Sultanate of Oman people are working between these two ages. They can only start working from 18 years old and they are eligible for most of the government services after this age. On the other hand, the retirement age in Sultanate of Oman is usually about 60.

The survey covers four regions of Sultanate of Oman. These are Muscat, Al Batinah, Al Sharqiya and Al Dakhliya in order to illustrate the situation in cities and in rural areas. The main reason of choosing only these four regions among the others is that these regions are the closest to the capital Muscat and they have the biggest population in the country. A second reason is that a pilot test was developed earlier, covering all the regions of the Sultanate, but the data received from other regions were too small to be reliable.

The limitation of the study is that the link can be accessed by smart phones, tabs or PCs but that citizens who do not have such facilities or knowledge cannot participate in the questionnaire or access it.

1.7 Operational Terminologies

In this thesis, many terminologies and key words are presented and used due to their relation and their essential roles in the study. Hence, Table 1.1 is illustrates these terminologies along with their definitions as provided by different recognized scholars

Table 1. 1:
Operational Terminologies

Terminology	Description
G2G	introduces the relation and the interaction which should be illustrated between different government sectors and between different departments in the same government sector (Al-Zahrani, 2011)
G2C	citizens are the targeted customers of e-government and they are the main influencer and reason to make such services and this part is for the interaction between government and citizens in terms of the provided services (Al-Zahrani, 2011)
GOE	Indicates the government operation performance (Aydinli and Ravesteijn, 2010) that would be measured using SERVQUAL
Technological Intention to use	Citizens get motivated to use a certain system or application if this technology is having a certain criteria or features (Su, Chang and Wang, 2011)
Behavioral intention to use	Citizens get motivated to use a certain system or application if it was used or marketed by social groups friends or family or any matter that touches the person's behavior or feeling (Barua, 2012)
e-government	set of processes and government supporting and interaction systems which allow and activate citizen interaction to access to the available offered services (Al-Shafi, 2009)
Government-Citizen relationship	Is the relationship between the service provider (government) and the service request (citizen) which affect the performance of the service style (e-government) (Cable, 2013)
Citizens-centricity	focus about the citizen in governments as the main factor while presenting a service style or changing the service approach (Elsheikh and Azzeh 2014)
Facilitating Conditions	The belief that organizational and technical infrastructure exists to support the system and provide resources like money, time and technology factors that would facilitate or at least inhibit the latter from being utilized (AL-Zahrani, 2011)
Performance Expectancy	citizens expectation of the system's performance against the required and the desired service applied(Venkatesh et al., 2003)

Terminology	Description
Effort Expectancy	the ease degree of ease associated with the system use (Barua, 2012)

1.8 Thesis Structure

This thesis has been divided into seven chapters. The chapters with their contents are outlined below:

Chapter One: Background and overview of thesis are furnished in this chapter

Chapter Two: This is where the literature review starts and it contains a complete overview and background of e-government like discussion of definitions, theories, concepts, models, milestones and strategies. Advantages and disadvantages of e-government are part of this chapter

Chapter Three: This chapter is considered as part of the literature review but it focuses mainly on the Sultanate of Oman as a country and the current e-government situation and all corresponding factors like IT and population

Chapter Four: This is the quantitative research methodology of the thesis where surveys and meetings are conducted in order to gain and identify key factors and attitudes which affect or may affect citizen acceptance of the new service methodology. Comparison between quantitative and qualitative research is part of this chapter

Chapter Five: This lists the gathered information and procedure from surveys and meetings along with a thorough discussion of collected data using a statistical analysis and structural equation modeling approach

Chapter Six: Deep discussion of key factors affecting citizens' acceptance of e-government services

Chapter Seven: Summary, questions, answers, contributions, limitations, conclusions and recommendations

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides an overview of the literature on of e-government in general and its effect on government operation excellence (GOE). Sophisticated literature on e-government in terms of definitions, models, classifications, categories and more of best practices and successful approaches is to be established in order to achieve the optimum GOE for the nation. The section has been divided into four main categories that form the framework at the end. The first category is the GOE of nations and how this can be achieved through illustrating modern researches and scholars. GOE in this research has been evaluated and discussed using SERVQUAL theory (Assurance (Ass), Tangibles (Tan), Reliability (Rel), Responsiveness (Res) and Empathy (Emp)).

The second category is the e-government and it is categorized into citizen-centricity, effort expectancy, and performance expectancy and facilitating conditions. Then the third and the fourth categories illustrate the other effects and the relation between e-government and GOE. The first category is the Behavioral Intention to Use effect on the relation between e-government and GOE. This intention to use is attached to private citizens. The elements of this part are Image (I), Social Influence (SI) and Perceived Behavioral Control (PBC). The second category is the Technological Intention to Use effect on the relation between e-government and GOE. This intention to use is from the

citizens' perspective. The elements of this part are Perceived Easy to Use (PEU), Perceived Usefulness (PU), Perceived Risk (PR) and Trust in Technology (TiT).

2.2 Government Operation Excellence (GOE)

The impact on changing the style of business citizens and government interactions and communication is significant by introducing the ICT (Information Communication Technologies) and its effectiveness can be observed by the fast acceptance of related technologies like: internet, smart phones and taps. Even now, modern societies and digital economies consider ICT as the basic foundation (Al-Zu'bi, 2012). One of the Exhibited possibilities of modern technology (Beer, 2011) is its threat to existing power settings and economic relationships. This is coupled with a huge potential for transformation and an impact on business, citizens and government manners and their relations (Ibrahim et al., 2005) like providing an essential tool for dissident political organization around the world (Hirschfeld, 2012; Reddick, 2010; Serageldin, 2011).

From the government point of view, e-government is becoming as essential task which must be taken in consideration because it distributes government information and services in parallel with facilitating its operations. Generally, e-government aims to offer and provide a variety of services which concern citizens in the city or country in an efficient, accountable, transparent, accessible, fast, cost effective and improved way. All these factors are counted as the expected e-government advantages (Atkinson and Castro, 2008).

Recently, the attention of scholars and researchers has focused on the government attributes or features which basically interact with citizens such as websites and support claims. The arguments between different scholars differ from one point to another. Some of them argue that offer access to government information will enhance transparency, while others suggest engaging citizens in official dialogues with government will increase trust between both parties. Although these different agreements and suggestions consider different points and discussed different targets, their final target is to eliminate the barriers which may impede the government-citizens relationship (Ibrahim et al., 2005).

Emerging technologies worldwide continue to become more important and more significant players in different aspects and areas, especially in developing systems to make their operation easier and faster (Ibrahim et al., 2015). Hence, operating strategies would need to allow different system operators to mitigate the adverse effects by maximizing system benefit. Systems become advanced and more cost-effective. Traditional system operating strategies will need to be revisited and reevaluated (Ibrahim et al., 2015). In order to realize this potential in systems, the operational aspects need to improve management of different stakeholder relations, interdisciplinary synthesis, and the successful operational excellence application (Plà, Sandars and Higgins, 2013). Darnell et al. (2013) illustrated that in order to get the optimum enhancement of operation excellence of any agencies there should be recognition of employees and provision of opportunities for leaders for more professional development and flexible work environment. However, this environment cannot be met unless the employee has a calm

area for work, away from the public and crowds of citizens looking for their services. Darnell et al. (2013) further suggested that public services should be promoted well in order to achieve the desired GOE faster with more efficient manner.

On the other hand, a single governmental agency or department cannot reach full governmental excellence alone because delivering added value public e-services in e-government often requires cooperation between two or more government agencies and departments (Elmir, B. and Bounabat, 2010). Generally, such cooperation is ensured and attained by implementing interoperability between targeted automated business processes (Elmir, B. and Bounabat, 2010).

Since the World Wide Web's (WWW) establishment and development, considerable attention has been given to the different adaptation of web-based technologies, especially to business environments like business-to-business (B2B) and business-to-consumer (B2C) sectors. After that, other new sectors have gained more attention, including the involvement of government such as government-to-business (G2B) and government-to-citizen (G2C). Since governments are traditional and considerably more conservative entities, they are slower to change or adopt new initiatives than other operators in the faster commercial field, it is reasonable and not surprising that governments in general have been slower to clamber onto the bandwagon of the web-enabled (e.g. Marche and McNiven, 2003). Indeed, it is more reasonable to question whether governments really require and want to improve and enhance the current service transition from government to better e-government approach. Nevertheless, nowadays a considerable e-government movement is building in different countries and nations with a number of different

national governments taking extensive measures to engage thoroughly in the radical transformation of their portfolios. Generally, the intention of the different service approaches and service styles provided, or intended to be provided, by governments will serve as a guide for better understanding their own motivation towards the concept of e-government in general and to avoid possible potential problems and obstacles during this transition(Davison, Wagner and Ma, 2005). Moreover, identifying different unique cases of e-government will enhance the evaluation and the implementation adoption. Davison, Wagner and Ma (2005) stated that the government reinvention would be better termed "new public management" because it is totally improved and contributes to the enhancement of GOE. Government Operation Excellence (GOE) is not tagged only to the transition from government to e-government but considers the different services and practices that governments provide for the betterment of the country.

Operation performance management is known as a planned process of primary elements like agreement, measurement, feedback, positive reinforcement and dialogue (Armstrong and Taylor, 2014). Alegre, Sengupta and Lapiedra (2013) indicated that operation performance is divided into two main dimensions only: external and internal. Prajogo (2012) by contrast illustrated that the Operation performance triggers are quality performance, delivery performance, flexibility performance and cost performance. On the other hand, Chen, Delmas and Lieberman (2015) indicated that the three different dimensions that are efficiency, capital and labor.

The excellence service in this study is associated with the service quality because it is focusing on the service provided by the government to citizens. Organization with superior service quality will contribute to high customer satisfaction. With regards to the government services, the service quality is able to boost the government's image (Xin-jian, 2008) and produce positive citizen behavior (Shahin, Khan and Chetter, 2012). Generally, one of the popular models in the service quality is Parasuraman et al's (1984) five dimensional SERQUAL model (Zhang et al., 2010). The SERQUAL model "*considered typical methods in the evaluation of the service quality. They put forward that the level of "Customer Perceived Service Quality" depend on the difference between the Perception of customer in the service process and the service Expectations*" (Zhang et al., 2010, p.576). Hence, the assessment of GOE can be based on the same common criterion as is stipulated in the SERVQUAL approach. It can be categorized into assurance, tangibles, reliability, responsiveness and empathy (Huai, 2011)

2.2.1 Assurance

Huai (2011, p.3) defines assurance as "*the knowledge and courtesy of employees and their ability to convey trust and confidence*". Security and privacy factors represent the security and protection level of a citizen's personal information provided by e-Government services. Since the assurance dimension on the SERVQUAL scale refers to the security sensation and security trust that employees provide to citizens (Parasurnaman et al. 1988), the dimensions of privacy and security probably replace the assurance dimension in an online environment and in e-services (Wolfinbarger and Gilly, 2003). One of the main obstacles to be considered in online environment development is lack of

confidence which is basically stimulated by the deficiency of security and privacy assurance (Cristobal, Flavián and Guinalíu, 2007).

2.2.2 Tangibles

Tan, Benbasat and Cenfetelli (2008, p.3) define tangibles as "*Functional appeal and web-interface appearance of the e-government website*". Tangibles could be attributable to the fact that customers are aware of the different financial constraints that are typical in different contexts. Hence they attach more other importance to other service delivery aspects. Thus, most services are intangible (Bateson 1977, Berry 1980, Lovelock et al., 1981; Tan, Benbasat and Cenfetelli, 2008; Huai, 2011) because they are counted as performances rather than as tangible objects. Indeed, precise specifications concerning manufacturing quality can rarely be set. Zeithaml (1981) explained that most services cannot be counted, measured, inventoried, tested or verified in advance of sale to assure quality (Huai, 2011), but the firms may find it difficult to understand how consumers perceive their services and evaluate service quality. Thus, in purchasing goods, the customers may employ many tangible cues for judging different aspects of quality like: style, hardness, color, label, feel, package and fit. By contrast, in purchasing or dealing with services like e-Government fewer tangible cues exist. Thus, Parasuraman et al. (1988) argued that in most cases, tangible evidence would be limited to the service provider's physical facilities, equipment and personnel.

2.2.3 Reliability

Zhang et al. (2010, p.576) define reliability as "*Ability to perform the promised service dependably and accurately*". Basically, it governs the degree to which the functionalities offered deliver on promised outcomes in order to ensure that the execution sequence and performance of these delivered service functionalities will not fluctuate (Tan, Benbasat and Cenfetelli, 2008). From citizen to citizen, according to Parasurnaman et al. (1988), reliability is considered as one of the most important dimensions in the SERVQUAL instrument. This finding is a concept indorsed by other scholars (Sukasame, 2010; Zeithaml, 2002; Alanezi et al., 2010).

2.2.4 Responsiveness

Wang, Yan and Liu (2010, p.5379) define responsiveness as "*the Willingness to help customers and provide prompt service*". Online users and, specifically in this case, citizens, expect the organization and governmental agencies to respond to their inquiries without delay (Yang and Jun, 2002; Alanezi et al., 2010). Hence, immediate and fast response will assist e-Government users in making decisions faster, answering their questions and resolving problems. Lee and Lin (2005) discovered, through a study, that there is a correlation between the responsiveness dimension and customers' satisfactions.

2.2.5 Empathy

Li, Ying and Wei (2011, p.1) defined empathy as "*caring about customers sincerely, knowing the customer's demands, and making the service have human interest*". Its dimension on the SEVQUAL scale is concerned with presenting and providing care and giving individual attention to customers (Parasuraman et al. 1988). In the online

environment, the empathy dimension could be named as personalization since there is no face to face interaction or direct human interaction between the customers and employees (Madu and Madu, 2002; Lee and Lin, 2005; Li and Suomi, 2009; Alanezi et al., 2010). Thus, personalized service or empathy can play an enormous role improving the customer's satisfaction by providing some personalized services such as e-payment, special delivery and service process (Li and Suomi, 2009). In previous research the empathy dimension was given different names such as customization (Madu and Madu, 2002; Sohn and Tadisina, 2008; Surjadjaja, Ghosh and Antony, 2003; Yang and Jun, 2002) and personalization (Lee and Lin, 2005; Nusair and Kandampully, 2008; Yang et al., 2003). Figure 2.1 illustrates the integration of SERVQUAL categories into GOE.

Figure 2. 1:

SERVQUAL categories applied to GOE developed for this Thesis

2.3 Electronic Government (e-Gov)

Electronic Government or in short e-government can be defined as set of processes and government supporting and interaction systems which allow and activate citizen interaction to access the services on offer. The extra-ordinary speed of development of ICT and efficient and business effectiveness has exhibited a strong impact in variety of day to day work and interaction between citizens, companies and economic activities. However, considering technology as a way to reduce cost and increase efficiency is not good practice since it should interact and respond to the client's needs (Deloitte Research, 2000). Brewer, Neubauer and Geiselhart (2006, p.1) stated that "*The role of government has changed from leading innovation to regulating corporations that often have better equipment and more technical expertise. The Internet and related technologies have contributed to globalization by increasing both the amount of information present in the environment and the speed of information flow*". Many definitions of e-Government has been illustrated and furnished by scholars helping to give the best definition. Some of them defined it as the service supplied by government to citizens using the internet, while others identify it as service with paperless and environment friendly methodologies. In addition to these definitions, some scholars have defined it as the easiest and fastest service ever using technologies. These definitions are all correct since they define e-government from different prospective and different angles. Due to the complications of e-government, it gives different researchers a different focus and view of the project. Chadwick and May (2003) attribute this issue to the complexities in the public sector e-government confusion and multiple interpretations. Therefore, Marche and McNiven (2003) concluded that no definition enjoys broad acceptance. Some researchers

(examples Silcock, 2001; Fang, 2002) gave a definition based on the government style of service while others (examples Dpepa, 2001; Moon, 2002; Al-adawi, Yousafzai and Pallister, 2005; Dawes, 2002) may take the IT and communication methodology as the core of the definition. Another scholar could take the interaction between authority and society as the main point of the definition. Gil-Garcia and Pardo (2005) argued that different definitions may introduce and describe e-government in general them but this will fail on deeper considerations. For example, Silcock (2001, p.88) gave it a very simple definition

> *It is the way that the government decides to serve public*

This definition is completely focused on service style from the government prospective without interfering with other category or side. However, Fang (2002, p.2) gave it a deeper definition and illustrated some reasons for the government to decide to make such decisions.

> *"A way for governments to use most initiative information and communication technology, 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 institution processes"*

Although this definition is still taken from the government point of view, other categories like G2C and G2B are included along with the communication methodology platform. Fang focuses on employing and using a web-based internet application to deliver better

services and to open new opportunities to improve participation between the public and decision makers. Bertot et.al (2008, p.1) and Carter and Belanger (2004, p.1) suggested that:

> *"Governments will provide services and resources tailored to the actual service and resource needs of users, including citizens, residents, government employees, and others" (Bertot et.al, 2008, p.1)*
> *"The use of information technology, especially telecommunications, to enable and improve the efficiency with which government services and information are provided to citizens, employees, business and*

This definition includes three dimensions of definition which focus on citizens, employees, businesses and their connection to the government. Information technology (IT) receives importance in the definition as a communication platform (G2E) as another category along the two previous categories G2C and G2B. Moreover, it is suggested that the government will tolerate and modify its service and style of service in line with the needs and requirements from all the corresponding categories (G2C, G2B and G2E). Others gave e-government a different definition, like The United Nations Division for Public Economics and Public Administration (UNDPEPA), Moon (2002) (Al-adawi, Yousafzai and Pallister, 2005, p.1) and Dawes (2002, p.1) define it as

"Utilizing the Internet and the World Wide Web for delivering government information and services to citizens" (Dpepa, 2001) (Al-adawi, Yousafzai and Pallister, 2005, p.1)
"The use of all information and communication technologies, from fax machines to wireless palm pilots, to facilitate the daily administration of government…" (Moon 2002) (Al-adawi, Yousafzai and Pallister, 2005, p.1)
"E-government is the use of information technology to support government operations, engage citizens, and provide government services" (Dawes 2002, p.1)

These definitions focused on the communication platform like web-based internet applications to serve citizens. Leitold et al. (2002, p.1) defines it as

"The interaction between state authority and society with help of information and communication technology (ICT) promises to improve the services for the citizen and at the same time tremendously reduces retention periods and costs, such as, by providing costly media transactions" (Leitold et al. 2002, p.1)

In this definition, the main focus is the G2C category without interference from other categories. This two dimensional interaction (authority and society) is further discussed with the benefits of e-government like saving citizen's time and improving the country's economy.

Although all the previous definitions are correct, and they illustrate e-government in specified ways, they remain old definitions and they should be modified to serve our new technologies. They also demonstrate that there is no general agreement on the e-government definition. The reason could be due to the complexity of question, as e-

government contains many categories like G2C, G2B and G2E. It also involves many issues like economics, information technology, social considerations, politics and services. These different categories and issues are given a red tag by the different scholars and researchers from different disciplines and knowledge who contribute and engage in this project to enhance and improve global knowledge about it. Although this phenomenon will enrich options, interests and discussions in e-government it will also create a lot of conflict and produce different outcomes as a direct result of the different interests and backgrounds of different scholars and researchers. Definitions are defined from different point of view when they should consider the full picture of the system. E-government in general incorporates many categories and points of interest like: government, citizens, employees and businesses. All of these categories are connected and can fuse together using the proper technology and communication media. For the purpose of this research, the e-government definition of e-government:

> *It is a service provided by a government to serve citizens remotely without direct interaction with employees, long travel or waiting procedure. This service will be intersected with some businesses and new technology communication to enhance internal and external data transfer and business services*

It can be observed from this definition that it has broader view of information technology since it does not mention web-based, website, internet or internet applications. It only mentioned that the communication should be wireless, which will allow citizens to interact with employees without direct interaction. Moreover, it includes all categories of the e-government (G2G, G2C, G2B and G2E) and it does not stop with internal

communication within government departments or sectors. It also includes communication between the government, which is the decision maker and service provider, with citizens who are the society and public.

Table 2.1 provides all the definitions from the different mentioned scholars above and categorizes them with their point of view.

Table 2. 1
Summary of e-government definitions

No.	Definition	Feature	Author
1	It is the way that the government decides to serve public "A way for governments to use most initiative information and communication technology, 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 institution processes"	Focus in service style from government prospective. It takes the definition from government point of view alone or towards the other categories	Silcock (2001, p.88) Fang (2002, p.2)
2	"Governments will provide services and resources tailored to the actual service and resource needs of users, including citizens, residents, government employees, and others" "The use of information technology, especially telecommunications, to enable and improve the efficiency with which government services and information are provided to citizens, employees, business and government agencies"	It includes all categories involved in e-government along with the communication strategy	Bertot et.al (2008) Carter and Belanger (2004, p.1)
3	"Utilizing the Internet and the World Wide Web for delivering government information and services to citizens" "The use of all information and communication technologies, from fax machines to wireless palm pilots, to facilitate the daily administration of government…" "E-government is the use of information technology to support government operations, engage citizens, and provide government services"	Taking the definition from information technology (IT) point of view	Dpepa (2001) Moon (2002) (Al-adawi, Yousafzai and Pallister, 2005, p.1) Dawes (2002, p.1)
4	"The interaction between state authority and society with help of information and	Focuses mainly in	Leitold et al. (2002,

No.	Definition	Feature	Author
	communication technology (ICT) promises to improve the services for the citizen and at the same time tremendously reduces retention periods and costs, such as, by providing costly media transactions"	G2C without interacting with the other categories	p.1)

2.3.1 Citizens-Centricity

Alaaraj and Ibrahim (2014) explained that in the absence of agood government-citizens relationship and specifically in the absence of citizen trust, citizens may become more suspicious about the service system presented by the government. Existing research on e-government citizen-centric service delivery, especially in developing countries suggests a facing lack of explanatory power for reasons like misunderstanding the relationship between the ICT implementation and social structures. Having a citizen-centricity e-government approach would reduce the huge gap between applied strategies and government policies on one side and citizens' perceptions on the other hand .Thus, the citizen-centric delivery e-government services determinants in developing countries would allow for better understanding of the citizens' needs, desires, requirements and priorities that must be taken into consideration by governments to ensure the success of services (Elsheikh and Azzeh 2014).

Gilmore and D'Souza (2006) illustrated that it is essential to focus on citizens from a government perspective and on customers from companies' perspective as the main factor when presenting a service style or changing the service approach. Hence, e-government should be presented as citizen-centric where it basically represents the difference between the delivered services against the desired one. Moreover, it should

evaluate the current service delivery in terms of meeting citizen expectations and needs by using the following attributes (Gilmore and D'Souza, 2006):

- Service design coverage against user requirements
- User interfaces languages of use against the most commonly local used local languages
- New services style and approach against provisionally offered conventional services
- The reduction of citizens visits to higher level offices for completing desired services
- Governmental employees knowledge and familiarity with the services packaged and delivery for different user groups or individuals

Lack of citizen-centricity in e-government implementation is one of the main e-government implementation challenges in developing countries. In the light of this challenge, lack of citizen's participation in e-government is expected. The e-government strategy should announce that a successful e-government implementation needs different stakeholders' effective participation including citizens. Gunter (2006, p.365) argued that e-government "*does not just depend on computer power, but also on the willingness of people to adopt it as a normal form of interface in respect of public services*" (Gunter, 2006, p.365). Therefore, Chan et al. (2010), Vencatachellum & Pudaruth (2010), Abdulwahab & Dahalin (2011), Keramati & Chelbi (2011), Lessa et al. (2011), Alzahrani & Goodwin (2012) adopted different empirical studies in order to have a system facilitating e-government as more citizen-centric and to influence citizens and their intention to use it as the main goal. As per these recent empirical studies, it was shown

that the facilitating conditions, along with effort expectancy and performance expectancy, have a significant impact as control factors that directly influence citizens' intention to use e-government. It will also focuses e-government on citizens' desire and requirements. Citizens' engagement is illustrated as a way of improving their trust in governments and from it the government-citizens relationship becomes more citizen-centric system (Bonsón et.al, 2012).

2.3.2 Facilitating Conditions

Venkatesh et al. (2003) defines facilitating conditions as the degree to which individuals believe that as organizational and technical infrastructure exists to support the system and it represents the existence of resource factors perception like money, time and technological factors that either facilitate or inhibit the latter from being utilized. ALZahrani (2011) insisted that facilitating conditions are part of the e-government adoption and have a significant effect on consumers' intentions to use it. Facilitating conditions are an important barrier and a significant control factor as well. There are two main dimensions included in facilitating conditions and there are:

1. Resource factors, such as time and money
2. Technology factors like knowledge and country infrastructure.

Indeed, the absence of such facilities in both dimensions can affect the intention to use by citizens and can impede the adoption of the approach. ALZahrani (2011) further illustrated that facilitating conditions contains two main elements there are:

1. Technology support, defining the resources needed in order to use e-government services, such as PCs and Internet services,
2. Government support, defining the efforts from government that prompt and motivate various issues and aspects related to e-government services.

Government and technology support reflect citizens' beliefs about the government role in facilitating Internet usage along with turning the project of e-government into reality. The study seeks mainly to investigate citizens' viewpoints and feedback about this role. The more the government is perceived to be playing an effective and active role in supporting the e-government project with technology or normal governmental support, the more the individual citizen will be willing to use the service, and this will increase the intention to use (Al-Shafi, 2009).

Researchers in the field of technology studies (e.g. Moore and Benbasat, 1991; Thompson et al., 1991; Taylor and Todd, 1995; Venkatesh and Speier, 1999; Chau and Hu, 2002; Venkatesh et al., 2003; Chang et al., 2007) have found that the facilitating conditions construct has a valid positive effect on e-government projects, especially innovation use, and it has been found that it can be a significant technology use predictor. Al-Azri, Al-Salti and Al-Karaghouli (2010) conducted qualitative research by conducting many interviews in the Sultanate of Oman. Most of the interviewees believed that senior top governmental management support and commitment are imperative to provide and

allocate sufficient resources and funds and to discourage resistance and increase efficiency.

In this study, facilitating conditions were measured by considering the ability to assess required resources and to obtain the knowledge and the support required to use services of e-government.

2.3.3 Effort Expectancy

Venkatesh et al. (2003) defines effort expectancy as the degree to ease associated with system use. Citizens usually expect some amount of effort from government in the modification and implementation of infrastructure and systems. These different visible efforts significantly enhance the intention to use and improve acceptance of the new approach. Indeed, this acceptance can be correlated to the trust and positive relation with the government. Barua (2012) argued that effort expectancy has a positive impact on the intention to use by different users, from citizens or governmental employees, and towards the e-governance application system use. He further argued that this construct can have a significant effect, especially in determining information technology user acceptance.

2.3.4 Performance Expectancy

Venkatesh et al. (2003) define performance expectancy as "the degree to which individuals believe that using a system will help them improve their job performance" and for Al-Shafi (2009) it basically contains five different variables, which are:

1. Performance expectancy: citizens' expectation of the system's performance, judged against the required, or the desired, applied service.
2. Extrinsic motivation: citizens may influenced by external factors like the government-citizens' relationship
3. Job-fit: attach the specific task and service to the most suitable system
4. Relative advantage: citizens usually compare the new proposed service style against the traditional one. The, citizen's intention will be effected by the answer.
5. Outcome expectations: the expectation from citizens regarding any new service approach and style is to have an easier, better, faster and smoother flow without putting in any more effort.

In this study, performance expectancy is measured by taking the perceptions of using e-government services in benefits such as saving of money, time and effort along with facilitating communication between citizens and government, and improving the government services quality (AlAwadhi and Morris, 2009: Al-Shafi et al., 2009). Figure 2.2 illustrates e-Government categories mentioned for this study.

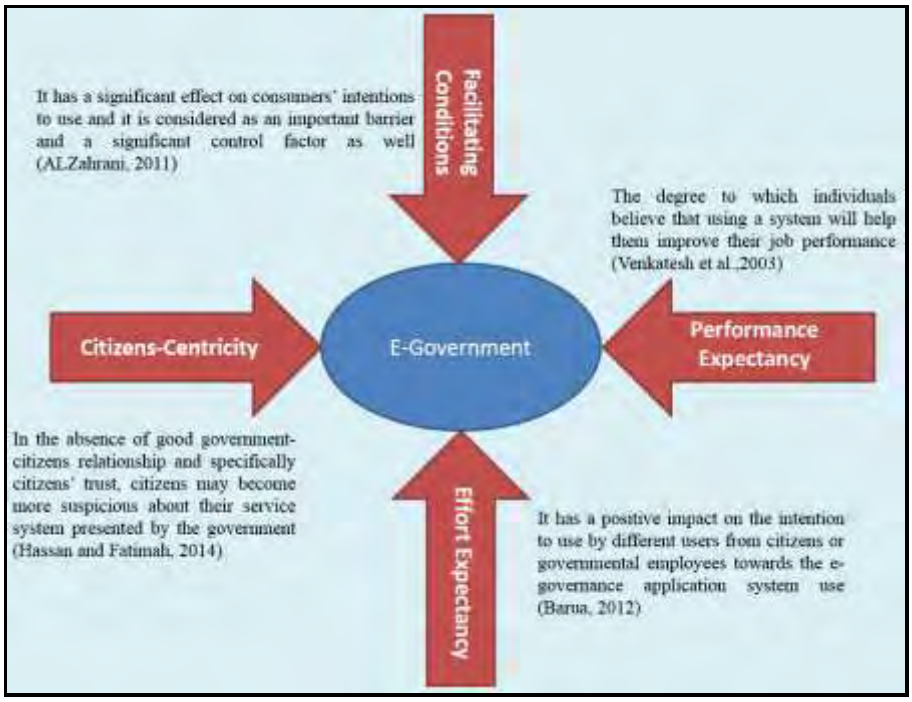

Figure 2. 2:

E-Government categories developed for this Thesis

2.3.5 Types of E-Government

Roy (2003) illustrated that the concept of e-government is an innovative idea that allows a country's government to control and manage services. A variety of definitions is currently available for e-government due to its multi-faceted character, and these definitions include many areas of study and different scholars from different areas. Hence, this diversity make creating a workable e-government definition very difficult. E-government has many synonymous terms like electronic government, digital government and online government. Usually, it refers to different digital interactions between different sides. Scholars differ in their categorizations of e-government but most of them consider the following four categories

- Government-to-Government (G2G)
- Government-to-Business (G2B)
- Government-to-Citizens (G2C)
- Government-to-Employees (G2E)

Yang et al. (2012) gave e-government a specific definition which is: e-government is the employment of the internet and World Wide Web for government service information and its transmission to citizens. For the purpose of improves effectiveness and efficiency of delivery of services for citizens, e-government depends on ICT and IT on various communication and telecommunication technologies. Thus, e-government services, operation, delivery and speed are constantly improving. This assertion is illustrated by Heeks (2002) statement which is: old e-government used the internet for processing data while the new approach is by using ICT.

While planning such a project many viewpoints should be considered such as: technical, people, security, legal and organizational aspects, social, political aspects and design information every project should move with the PDCA method (Plan, Do, Check and Act) (Maria and Efthimios, 2002). If a close look at the e-government project is taken, it will be found that it is a triangle with three main constituents these are:

1. Government
2. Business

3. Citizen

These three constituents move the project situation towards three main categories:

- **Government-to-Government (G2G)** is the category which introduces the relation and the interaction which should be illustrated between different government sectors and between different departments in the same government sector. Hence, the government should manage departments and sectors internally and externally before introducing the e-government to the public, because citizens should not move the service documents manually from department to department or even from government sector to another. Heeks (2002) stated that the G2G model represents communication among internal government departments, external government agencies, and different external institutions by integrating information via the Internet or any other telecommunication method. The G2G model enhances information sharing, improves efficiency, lowers transaction costs and enhance information and knowledge management. The e-government should be fully automated to give the best services and there should be a strong interaction and relation in the G2G category to obtain such service. Many scholars evaluate and categorize G2G as the foundation of e-government. Hence, there will be no e-government unless government is available and there no service will be introduced to the public via e-government unless it was available to them via government. Kamensky and Burlin (2004) gave similar argument when they stated that the G2G model represents communication among government

agencies, departments, and institutions using communication platforms like the internet (La Porte, Demchak and de Jong, 2002). Furthermore, proponents of the G2G model credit it wih many advantages like: it has a potential to enhance information sharing; it improves efficiency; it reduces transaction costs; and it enhances information and knowledge of management (La Porte, Demchak and de Jong, 2002).

- **Government-to-Business (G2B)** illustrates the relation between the government and different businesses in the private sector, other than the government, which should enhance and influence the service provided to the public. Earlier, some scholars ignored this category because they believed it was a relationship that should be mainly between government and citizens. However, most scholars now evaluate it as central part of the e-government project because in order to give citizens a fully automated service, the government needs to participate with banks, for example, to activate credit transfers or credit payment and it needs to participate with phone agencies, like Omantel and Ooredoo in the Sultanate of Oman to activate the SMS notices to citizens. All of these actions are now categorized under states that G2B category. Another example is the website of the e-government which is a very important part of it. Zhiyuan (2002), G2B represents business-focused applications that divert the old evolution approach of government from a bureaucratic concept to an enterprising and product orientation. A white paper by Accela, Inc (2002) argued that the continuous

improvement and diversification of E-government provides a clear distinction between G2B and G2C in terms of scope, information depth and operations.

- **Government-to-Citizens (G2C)** is the part which is categorized as the most important category since it deals directly with customers, who in this case are citizens. Although e-government is for the benefit of the country and the government improvement, citizens are the targeted customers and they are the main influencers and the reason to make such services. In addition to that, citizens are the people who will evaluate the project, if it is successful or unsuccessful and this will be evaluated by the participation of citizens as well because without their participation and enrollment the project will be completely unsuccessful and will be categorized as a waste of money and time (Al-adawi, Yousafzai and Pallister, 2005). White (2007) gave an example of G2C on an official web portal in the U.S., but argued that many governments have implemented their G2C model around the developed world. White (2007) also observed that G2C can play a role at both in the state level and local level and not federal government. Therefore, Bose (2004) said that the design and implementation of G2C should be a very easy operation so that citizens will not face difficulties in obtaining required information or documents or while submitting paperwork or applying for a specified service.

The evolution of government to enterprising orientation from a bureaucratic nature is reflected in the business-concentrated applications in the previous model (Kandiri, 2006;

La Porte, Demchak and de Jong, 2002). Kandiri (2006) further argued that continuous improvement and expansion of the model will offer a clear distinction between G2C and G2B in the manner of operation and the scope and depth of information.

It can now be observed that there is a general acceptance of three or four categories which are G2G, G2C, G2B and G2E. On the other hand the U.S. Office of Management and budget (OMB) (2002) indicated a different categorization for G2E which they called IEE (International Efficiency and Effectiveness). The main improvement focus in the IEE category is to improve government business by improving the most important activities in it like human resources, supply chain and financial management. Another categorization is presented by Hiller and Belanger (2001) which offers six main categories. These are listed as following:

1. Government Delivering Services to Individuals (G2IS): which is communication between the Government and Citizens in one or two directions like feedback
2. Government to Individual as Part of Political Process (G2IP): which is the participation of citizens in government activities like e-voting
3. Government to Business as a Citizen (G2BC): which are services provided to businesses in comparison with those provided to citizens like tax
4. Government to Business in the Marketplace (G2BMKT): which is the direct relation between government and business without the interaction of citizens directly like e-payment

5. Government to Employees (G2E): which is the same as in the previous categorizations
6. Government to Government (G2G): which is the same as in the previous categorizations

Additionally, having all these relations between government and all the corresponding categories will enhance other relations between the categories alone without the interaction of the government such as Business to Customer (B2C), Business to Employees (B2E) and Customers to Employees (C2E). Although these categories are known in business and marketing studies they have not been indicated specifically for the e-government project to date. There are other categories which may be indicated like Business to Business (B2B) in terms of competency or interacting business, Customer to Customer (C2C) and Employees to Employees (E2E) in terms of marketing e-government services and styles. Other justifications of categories are:

- Business-to-Citizen (B2C): because sometimes citizens should go through the business category in order to reach the government, like with e-payment and e-surveys. This may influence the competency between many business sectors in terms of giving discounts or special treatment for frequent users and loyal customers and to give them more flexibility.
- Business-to-Employees (B2E): same benefits given to citizens could be given to employees.
- Customer-to-Employees (C2E): this category is always available and the relation of citizens or customers with employees may enhance the speed of the application

and make application tracking easier. This category is usually used if both the citizen and employee are relatives or friends. However, e-government is an automated system base system and all citizens will be equal in terms of application procedure and speed of delivery

Although this categorization may seem different and more complicated, it is based on the same platform of the previous three dimensions. For instance: first two categorizations (G2IS and G2IP) are listed under G2C while the next two categories (G2BC and G2MKT) are parts of G2B. Table 2.2 is illustrates a comparison between these findings.

Table 2. 2
Comparison between Categories of E-Government

No.	Huang and Bwoma (2003)	(OMB) (2002)	Hiller and Belanger (2001)
1	Government to Government (G2G)	Government to Government (G2G)	Government to Government (G2G)
2	Government to Business (G2B)	Government to Business (G2B)	Government to Business as a Citizen (G2BC) Government to Business in the Marketplace (G2BMKT)

3	Government to Citizen (G2C)	Government to Citizen (G2C)	Government Delivering Services to Individuals (G2IS) Government to Individual as Part of Political Process (G2IP)
4	Government to Employee (G2E)	International Efficiency and Effectiveness (IEE)	Government to Employee (G2E)

Lewis (2007) noted that between the four traditional methods (G2G, G2B, G2C, G2E), there are six different hidden boundaries these are the strategic implementation, 3 main sectors public sector, private sectors and non-profit sector the boundary applied by bureaucracy, different layers of management and labor, the connection between management and the bureaucracy and the connection between bureaucracy and citizens strategy making (La Porte, Demchak and de Jong, 2002). Mirchandani, Johnson Jr. and Joshi (2008) discussed this by stating that especially on strategic issues, citizens will not usually be well-informed or have knowledge about the bureaucracy fields which require expert personnel in the areas of investment and strategic planning. Furthermore, the opportunities for citizens with detailed knowledge in the government procedure agenda are very limited. Citizen's interest could be relatively narrow and mainly concerned with a limited range of strategic impact due to many aspects like: access restriction and civic engagement.

To improve the effectiveness of coordination initiatives, the focus is on the e-government implementation work, but this method is most likely to be successful in small countries. Most developing countries, however, still use this norm because central strategy is difficult to obtain and drive. It is important, therefore, to choose between a central and a departmental strategy, and to take the most appropriate approach, although that decision may be dependent on budgetary considerations size (Mirchandani, Johnson Jr. and Joshi, 2008).

2.3.6 Challenges of E-government

The key parts of strategic management in terms of monitoring e-government initiatives and progress is by identifying and understanding the gaps between current and future states. The gap between current realities and reform initiatives in the public sector is vital to measuring and determining the successful of reform initiatives (Reddick, 2010). In addition, progress mapping from "*the way things are now*" to "*the way things ought to be*" allows decision makers to investigate and monitor potential progress in each area and benchmark it with the requirement for future development by e-government. This can assist administration and strategy makers in analyzing the impact of their resource commitment, the potential advantages and the implementation effort. All of these levels and areas are engaged in the planning method (Chadwick and May 2003). For implementing a successful e-government program, policymakers and decision makers should develop specific and reasonably attainable goals and understand available resources required to achieve desired goals. Formulating a plan that can be implemented in full will require this information regarding resources or the lack of resources (Serageldin, 2011). Once governments have decided and are committed to strategies

transforming their governance processes, many significant challenges and opportunities will flagged up during the implementation. The most pertinent challenges expected to be encountered during e-Government implementation (InfoDev, 2002), are refined and presented in Table 2.3. Moreover, a set of recommendations for each part is provided in order to assist in overcoming each challenge for developing a successful e-Government.

Table 2. 3
Challenges and recommendations for successful e-government designed for this thesis

Challenges	Recommendations
1. Infrastructure Development Developing a basic e-government infrastructure is a struggling issue in all countries. Many developing countries like the Sultanate of Oman, do not have the necessary infrastructure	• Develop projects compatible with the country's telecom infrastructure. • Use mobile centers if telecommunication density is low. • Introduce telecom competition and regulations on digital technologies • Learn from past successes and failures and ensure sustainability • Allow rational and coordinated investment effort.
2. Law and Public Policy ICT application may encounter policy barriers. Hence, legislatures must ensure laws are updated.	• Consult with stakeholders to refurbish existing laws • Give legal status to e government information -publication. • Clarify laws and regulations to allow e-filings with government.
3. Digital Divide Gap between people accessing and not accessing internet. People without access	• Provide common access to public. • Illustrate access with proper training. • Provide motivations to private sector to donate equipment

Challenges	Recommendations
cannot learn important computer skills, and share in the e-government benefits.	and training. • Use local language and content to different communities. • Use entrepreneurs to build access points in small communities.
4. E-Literacy Groups unable to use ICT due to lack of computer literacy. It is very severe danger that the world may be divided into the "information rich" and the "information poor". Thus, e-government could equalize government access to its services	• Ensure that content is in local languages and easy to use. • Develop applications with speech or pictures instead of written text. • Include educational component. • Provide aides at access points to train citizens in basic computer skills. • Create programs with traditional media, to learn about E-government. • Special attention to groups difficult to integrate
5. Accessibility Governments must serve all society members irrespective of their physical capabilities.	• Design applications that accommodate disabled citizens. • Establish, as a legal requirement, technology for the disabled. • Set different performance criteria and measure progress
6. Trust E-government projects must build trust within all stakeholders and within all ministries.	• Build a strategy to keep communication open lines. • Begin with short-term projects for early results and larger scale ventures • Strong leadership essential in building confidence in programs.
7. Privacy Governments must be responsible for all personal information they hold from citizens through everyday transactions.	• Educate and train employees on privacy importance. • Design applications with privacy protection. • Minimize personal information collection and retention. • Limit personal access to identifiable information
8. Security Security aspects are fundamental because they can shatter public trust in e-government. Without trust, citizens may avoid using e-services which ask for detailed personal information.	• Designate a senior official responsible for computer security. • Continually assess systems for better implementation. • Backup regularly with store in a separate different locations. • Collect minimum information without disclosure. • Provide computer security training to employees.
9. Transparency Citizens usually do not understand government decisions. This lack of transparency could prevent public from participating actively in government communication.	• Post government services online rules, regulations and requirements • Make employees' offices positive examples of openness. • Give citizens the ability to track. • Train citizens and provide them with incentives. • Integrate transparency and process reform to regulations and procedures.
10. Interoperability Reliable e-government system requires comprehensive legacy overhaul systems.	• Map and assess available record systems. • Identify and reform regulatory schemes • Use common standards and adopt a common IT infrastructure
11. Records Management Manage available data to derive on analysis that allows for fast reaction in development	• Motivate data sharing and cooperation between departments. • Manage offline records for easy transformation to e-publication. • Creation and standardization of data is critical for data searches
12. Permanent availability and	• Design applications according to requirements.

Challenges	Recommendations
preservation ICT assist compact and convenient storage management for historical and old documents	• Consider compatibility, usability, relevance, language and affordability. • Encourage cooperation between government with the private sector
13. Education and Marketing E-government is useful when citizens know about it. Hence, education and promotion are needed.	• Develop publicity and training for the public in e-government initiatives. • Conduct research to ensure e-services respond to actual needs and implementation suits the target audience.
14. Public/Private competition/collaboration Identify government controls end and where private sector takes over in e-government efforts.	• Review laws and policies to impede public/private cooperation. • Ensure equitable and revisable agreements with partners. • Seek assistance and involvement from experienced organizations
15. Workforce issues Human resource should get a well-trained and motivated workforce for e-government success.	• Make timeline for implementation in a milestone manner • Hold regular meetings between leaders and employees. • Enhance motivation by rewarding individuals and agencies
16. Cost structures Governments should seek to invest properly in sustainable programs that can reduce cost and produce savings.	• Avoid fee-based service advertising. • Articulate functionalities clearly • Develop achievable projects with available resources. • Consider past successes and failures for current government's project.
17. Benchmarking Governments must evaluate e-government investments progress and effectiveness determining stated goals and objectives against appointed schedule	• Designate office for e-government implementation. • Fund the office and make it recognized by all relevant agencies • Conduct regular audits ensuring smooth progress • Review benchmarks regularly ensuring accurate measures • Create data collection system supporting program operations

Furthermore, energy and power to change is a transformational method requirement and it is mainly generated and driven by mapping and differentiating between the current reality and the mission statement. A transformation method requires two main items to keep it improving, and these are ideas of required improvement and a solid picture of the current situation. Therefore, the creation of new representation of e-government should involve implementers and planners to map and measure the current implementation stage versus the required and intended result (Chadwick and May 2003). Threatening the existing power settings and economic relationships is one of the exhibited possibilities of

modern technologies (Beer, 2011) but there is also huge potential for transformation and its impact on business, citizens and government styles and their relations (Ibrahim, Yazici, Mishra and Arifoglu 2005) like forming an essential tool for dissident political organizations around the world (Hirschfeld, 2012; Reddick, 2010; Serageldin, 2011). Tamara and Amer (2010) illustrated "10 Questions E-government Leaders Should Ask Themselves" This was initially introduced by the Roadmap for E-government in the Developing World (2002). These questions provide a clear path for the E-government. Tamara and Amer (2010) further illustrated that these 10 questions will help decision makers in the planning, management and evaluation of E-government projects. Table 2.4 furnishes the 10 questions with their description.

Table 2. 4
10 questions for successful planning and implementation of e-government

Questions	Description
1- Why pursue E-government?	E-government is a tool to help government, citizens and businesses and it is a part of the general reform program in the country in administrative and economic matters. It requires changing administrators and staff mindset and share G2G information between different ministries, departments and institutions, non-governmental trade G2B along with individual citizens G2C.
2- What are the vision and priorities for E-government?	Decision makers must possess a clear E-government project vision in order to build a common vision through goals or common society interests, for example: enhance provided services to citizens, improve and enhance government ministries' productivity and efficiency, support economic sectors priorities or strengthening the administrative system and government-citizen relationship
3- What kind of government is E-government?	There is no unified e-government model and it is based on the quality of targets which are based basically on financial budgets, human capacity, the ICT infrastructure and the legal framework.

Questions	Description
4- Does the project have the top authorities' priority interest?	The desire and contribution of political leaders is considered as one of the most important requirements for the implementation of any nation project like e-government project. Thus without this political support, many required aspects in the project like: availability of financial resources, cooperation between governmental ministries, policy aspects and human efforts cannot be guaranteed.
5- Is the selected approach achievable?	Selection of e-government projects is essential especially in the initial projects. E-government can act like a radiation point for the other future milestones and improvement projects as well as a driving force forward to other projects,
6- How is e-government managed?	An efficient management system is essential and important criterion in the success of e-government approach as is the case for all governmental operations and businesses. Thus, it is crucial before starting e-government project. Management should develop management mechanisms in all levels of the project.
7- How to overcome resistance?	Citizens may be show resistance new approach of e-government projects and to the refuse to adapt the new procedures. Their intention to use should be controlled and targeted in order to get the project success and it is worth understanding the causes of this opposition so they can be overcome
8- How to measure progress?	It is a sensitive responsibility to test success based on project objectives achievement like: service quality and the ease access to government information These goals are measured using different criteria such as size of e-transactions, response speed rate and number of provided
9- How to communicate with private sector?	It is necessary and important to search for companies and organizations with expertise in technical applications and the management of information and communication projects in order to complete e-government projects efficiently quickly and cheaply.
10- How to set government-citizen relationship?	The participation of different sectors and stakeholders of the project is an important in element in all phases in order to serve citizens in an efficient economic way. For instance, increase participation, pull information from websites, have surveys, get feedbacks for old and new services

Chadwick and May (2003) describes the e-government effort as a reform effort which aims to create a new platform in many areas. For example, e-government provides the ability to perform basic e-transactions and access information but some citizens still require and demand more sophisticated and customized type of goods or services. Thus a "*one size fits all*" approach is not always the right approach to follow. The focus now on the delivery of technology-enabled services may be shifted to provide services dependent upon to the user's needs and demands rather than targeting general operation efficiency. This would be a trend in keeping with an increasing emphasis on specialization, integration and functionality (Hirschfeld, 2012).

A further finding in the implementation regarding horizontal and vertical integration which leads to no pre-created roadmaps and no agreed worldwide international standard. As a result, strategic and operation domains now require more balance especially in citizen-concentrated initiatives. Heeks (1999), on the other hand, stated that developments in the technology field could either limit or enhance application choices or functionality and this should keep planners and decision makers fully aware of required technology and applications changes without forgetting to explore updates and room for improvements. Strategic foresight coupled together with technology and application change understanding is essential to maintain strategic constrains and to manage internal and external operations. Consequently, an e-government framework acts as a diagnostic tool that helps to predict impact and requirements of future trends. Therefore, this potential effect should be considered and taken into account throughout the entire development life cycle.

Tamara and Amer (2010) indicated that functional, social and managerial purposes differ from one nation to another in strategic priorities and these add different unique flavors and directions for decision and strategy makers in each e-government endeavor. Thus, viewing and assessing e-government plans is essential in all areas like context and application. Therefore, all countries could be considered as being in the early stages of development. However, this variety and different approaches from countries could be utilized to teach lessons and to selectively identify applications with the best combination that suits each specific nation to create synergistic learning and a network of knowledge.

Indeed, this will reduce and optimize the time and cost required for planning and strategizing efforts (Heeks, 1999).

2.3.7 Contributions of E-Government

E-government's concept along with its applications contributes significantly towards many aspects of national life like, government, society and environment.

2.3.7.1 Contribution to the Government

The implementation of e-government is occurs many forms of management and the urban governance is leaning towards some applications of e-government such as transparency, public sector administration and accountability. Many telecommunication tools and platforms serve e-government to provide better platforms and infrastructure like: emails, internet, WWW and lists of servers. In late 1990s, web-based portals and services were counted as integral and significant parts of modern e-government (Ho, 2002). Thus, management and organization of urban management could be called the "*information business*" which led Hepworth (1989) to coin the term "*municipal information economy*". Some definitions of e-government define it as info-kiosks where the public and citizens can access public services online and others define it as the storing of government agencies where there its better administration and data storage in electronic format for the public. Generally, definitions differ with goals, and the goals of e-government websites differ and are as diverse as the creation of the government (Jaeger, 2003).

2.3.7.2 Contribution to Society

E-government does not only give fast, accurate transaction and better delivery of information and services but it goes beyond that to contain the seeds of an even higher value: better practices and greater health of democracy. Additionally, there are many

other benefits of e-government which include more professional development opportunities being furnished through information sharing, online forums and bulletin boards within trade and professional groups. For instance, a citizen's ability to have and obtain convenient information about services, and private sector services, will improve with the interaction with government. Due to more recognition and care being given by the government to the internet and communication platform in the country, the effect will target the society and citizens for their knowledge and learning processes, along with an improvement in life style and a better level of education, information seeking and technology acceptance and the usage of modern equipment, applications, systems and tools. Pina, Torres & Royo (2007) argued that government recognition of the internet provides better access to the information and services provided by government anywhere, anytime and by anyone who has the knowledge and equipment

2.3.7.3 Advantages of E-government

Johnson (2007) beleived that: interactive websites and portals established by a government would encourage citizens to participate in decision-making which would increase citizens' satisfaction and trust in the government and the accountability level of government agencies. Torres, Pina and Acerete (2005) argued that considering technology as only a way to reduce cost and increase efficiency is a wrong consideration. Technology it is a remarkable and efficient way of facilitating communication and discussion platforms with clients to respond to their needs. Hence, a government's offered and delivered services through e-channels are termed e-government. Moreover, e-government conducted and initiated by most of the countries around the world took who done with consideration and concentrated on services and delivery of information to

citizens and businesses. These services through e-channels however are not supposed to replace traditional methods but should assist and supplement them (Al-Zahrani, 2011). Bertot, Jaeger and Grimes (2010) indicated different advantages of ICTs and the services attached to them in e-government

- reducing corruption
- promoting good governance
- strengthening reform-oriented initiatives
- reducing the potential for different forms to corrupt behavior
- enhancing government-citizen relationships and government-employee relationships
- allowing citizen to track their activities and service
- monitoring and controlling government the behavior of government employees

The main idea of e-government is to define the usage of the available information and communication technology infrastructure in order to transform government services from a traditional way to a more accessible, effective and accountable service way. Ultimately, the main aim of e-government is to offer both citizens and businesses access to government and public services with all promised and indicated advantages. On the other hand, there are many studies that conclude that citizens may play an important role in the decision making process by being engaged and having access to more information and surveys conducted by government. This will develop a stronger relationship and trust between both sides (Torres, Pina and Acerete 2005)

Transparency and new accountability forms have been highlighted as key element in good governance. Searching for new governance styles that promote higher transparency levels along with citizens' engagement is illustrated as a way of improving citizens' trust in governments and, from it, the government-citizens relationship (Bonsón et.al, 2012). Moreover, Alaaraj and Ibrahim (2014) claim that empowering the employees of public and governmental sectors through practicing on e-government service style would work like catalyst that creates trustworthy behavior among employees. This behavior would be beneficial in promoting transparency, effectiveness, efficiency and innovation.

Alaaraj and Ibrahim (2014) state that good governance would act like a strong and solid foundation for reforming organizations, especially through aspects like cultural, intellectual and technological interactions among existing employees. Good governance principles drive existing employees to be better in effectiveness and more transparent when providing high quality services. Additionally, they protects them from being involved in any corrupt behavior. Moreover, the quality of government services can easily be improved with more personalized services through information communication technology (ICT) usage (Alaaraj and Ibrahim, 2014; Linders, 2012; Bertot et al., 2012; Fischer, Smith and Valk, 2013).

2.4 Behavioral Usage

Essentially, learning social behavior involves learning the required and necessary skills in order to possess the ability that helps to resolve arguments without violence or misuse, to empathize with classmates, colleagues, friends, family and others to develop self-respect and mutual respect. It includes behaving responsibility and giving ownership, to

understand that actions have consequences either for themselves or others and to learn techniques for solving day-to-day issues and obstacles, particularly in provocative situations. Different emotional intelligences create and complete the relationship in each individual person's emotion and that may have an effect on the decisions and targeted goals (Campello and Graham, 2007).

These different emotions and behavioral initiatives by citizens can be controlled, or at least diverted, and switched towards the country's goal and target (Nor and Pearson, 2008; Lu et al., 2011). Behavioral initiatives may be changed due to social interactions with people like classmates, colleagues, friends, family and others or they may be influenced by other aspects from government and service providers like trust, availability, transparency and others. Any source of influence either from a social group or service provider will have a great affect on the individual who may take the initiative to use or try the new service or new service style (Lee et al., 2012).

Citizens should be treated as customers because government services delivery should be redesigned to be with a customer focus. However, governments do not have to call or address anyone as a customer by treating them well or to ensuring that services are designed with and for them. "*Customers buy products, clients buy services, but citizens have rights*" this does not mean that there is no need to improve, enhance and reinvent government, but it does give limit to the B2C relationships nomenclature and the G2C relationships (Davison, Wagner and Ma, 2005).

2.4.1 Image

Moore & Benbasat (1991) defined image as "*the extent to which the use of an innovation is perceived as enhancement of one's image or status in one's social system*" (Al-Zahrani, 2011, p.114). Perceived image refers to the level that one can increase one's own image and social status among others (Moore and Benbasat, 1991). Conversely, appearance image is positively associated with controlled and targeted motivation (Flicek et al., 2012). Flicek et al. (2012) further explained that there is a direct relationship, evidenced between energy image and self-reported exercise behavior, along with the relation between appearance image and intention to exercise. Nor and Pearson (2008) indicated that there are positive relationships between image and attitude. They used a study on internet banking in Malaysia. It revealed that image has a significant influence and effect on attitude. Karahanna et al. (1999) agreed with Nor and Pearson (2008) and indicated a positive link support between image and attitude (AL-Zahrani, 2011).

Image as a personal aspects with sport people, such as exercisers and athletes, has long been considered as an extremely effective performance enhancement tool. Moreover, It has been recognized as a potential self-regulatory strategy to enhance motivation and self-efficacy (e.g., Giacobbi, Hausenblas and Penfield, 2005; Hall, 1995).

2.4.2 Social Influence

The second component of the model is social influence which is defined as "*individuals' perceived pressures from social networks on adoption or otherwise of the innovation*" (Yang et al., 2012, p.132). Social influence has long been considered an important critical element in explaining adoption behavior (Cooper & Zmud, 1990; Karahanna et al., 1999). Family, friends/colleagues and media influence are all parts of this social influence

component (Al –Zahrani, 2011). Al-Zahrani, (2011) indicated that the relationship between social influence and behavior intention has been theoretically and empirically investigated by many previous studies (Gefen, Karahanna & Straub, 2003; Lewis, Agarwal, & Sambamurthy, 2003; Taylor & Todd, 1995; Venkatesh et al., 2003; Lu et al., 2011). Recently, many studies, especially in the mobile and electronic service fields incorporated social influence into their research models (Gu, Lee, & Suh, 2009; Hong & Tam, 2006; Lu, Liu, Yu, & Wang, 2008; Lu et al., 2011). For instance, in research on mobile internet services adoption, Lu et al. (2005) found that social influence positively influences perceived usefulness and intention to use. On the other hand, Karahanna et al. (1999) argued that social influence tends to reduce adoption of perceived risk because they provide strong evidence indicating adoption decision appropriateness and legitimacy.

2.4.3 Perceived Behavioural Control

Goal-directed behavior or behavioral control (BC) could be controlled by knowledge of consequences. Reduced goal-directed control moreover could be associated with some propensity for action without thought is information supports the claim that human impulses are marked by causal knowledge impaired use that makes adaptive decisions (Lee et al., 2012).

Taylor and Todd (1995a) concluded that the perceived behavioral control antecedents are self-efficacy and facilitating conditions. Lee and Kozar (2005) further suggested that researchers should identify different factors that suit a BC context in order to increase the

percentage of variance of the aspect (Al-Zahrani, 2011). Figure 2.3 shows the Behavioral Intention to Use (BIU) categories that are used in this study.

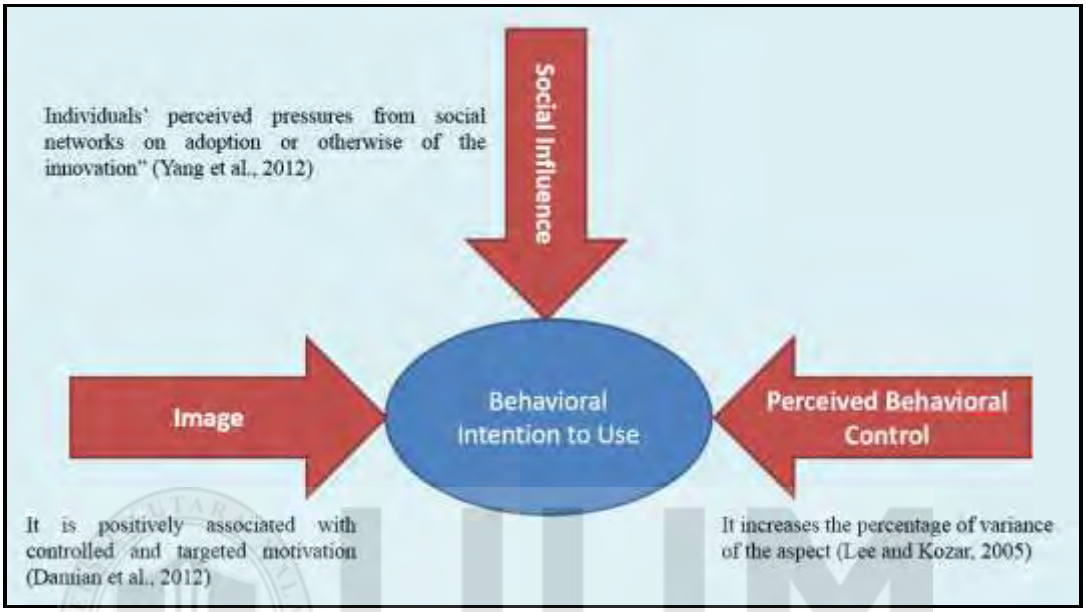

Figure 2. 3:

BIU categories developed for this Thesis

2.5 Technological Usage

In this new large-scale computing age with dynamic development and high complexity, there is a common weakness in the interoperability among IT and business. IT is being left for behind while business is on line. Poor business responsiveness along with current IT governance, make the situation even more difficult for e-government to achieve its desired enterprise goal (Wells, 2007).

In the 21st century, e-government transformation is considered as one of the biggest challenges among and within the IT-related sector from the perspective of scale and complexity. The main objective is adapting an existing e-government system and

methodology in order to obtain new computing requirements, based on the concept of a new service for citizens. Thus, it is necessary to increase the features of service level, quality and maintain consistency of policies and rules. Moreover, mission criticality and time of services, information sharing and interoperability, efficiency and productivity, along with the reduction of operation expenses, are all considered as priorities in this transformation project. Such a transformation is considered crucial for the service concept at a time of rapid change. The roadmap coherence in e-government transformation is critical (Wells, 2007). Although with the development of mobile communication technology, wireless mobile data services have experienced a rapid growth across the world, the general acceptance of those services is still not given enough consideration. Considering technological behavior by citizens towards wireless mobile data services and other available technologies as an integrated service thus addressing the acceptance influencers and issues is achievable by combining the technology acceptance different models along with different social behavior models. (Tan and Qi, 2009).

Furthermore, the factors included in the services technology, innovation of personal information technology (IT), facilitation conditions, social influences and service and product trust all affect the user's intention to accept and use. The same factors emphasize how society, citizens and users' psychology motivation influences their behavior and extends it to acceptance behavior or to a change in mental processes including attitude, intention to use and actual use (Tan and Qi, 2009). All these factors combined with IT behavior to create the complete picture and overview of the intention to use from both perspective.

The relationship between High Performance Work System (HPWS) and the operational performance of a firm or government agency is moderated by technological intensity and this relationship is stronger in more technologically intense usage (Kintana, Alonso and Olaverri, 2006). Innovation and knowledge transfer processes that have different diverse external partners within their process are considered difficult organizational activities due to reasons like costs, complexities and various uncertainties, generally related to technological innovation without forgetting the complexity of assessing diverse knowledge flows along and across organizational boundaries (Lin et al., 2012). Thus, it is unlikely that the capability to measure and assess inflows of knowledge acquired from different selected sets of diverse actors is evenly distributed across any firm or governmental agency. In particular, the associated technology management tools used by a firm or governmental agency that are utilized for identifying and selecting the technologies held by external partners can be argued to moderate the relationship between the governmental service method and technology innovation outcomes (Schmid et al., 2014). Many studies depict technology as a moderating factor between operational performance and the work system in any firm or service provider agency like, in this study, the e-government system (e.g. ShaemiBarzaki, Baharestan and Akbari, 2015; Knabke and Olbrich, 2015; Schmid et al., 2014; Oerlemans, Knoben and Pretorius, 2013; Lee et al., 2008; Sharma & Dave, 2011).

Today information technology proves the way for companies to achieve their desired business goals and improve organizational performance. Operational management

categories to service providers (both public and private) facilitate their operations and play a strategic role in providing competitive advantages and enhancing performance (ShaemiBarzaki, Baharestan and Akbari, 2015).

2.5.1 Perceived Ease of Use

Perceived usefulness has been defined as "*the degree to which a person believes that using a particular system would enhance his/her job performance*" (Davis, 1989). Davis (1989) explains that a high quality systme's perceived usefulness depends on user trust and the existence of a positive user-performance relationship. The user usually regards the system to be an effective way of performing tasks.

2.5.2 Perceived Usefulness

Perceived ease of use refers to the extent to which a person believes that using a particular system enables and helps in accomplishing the desired task free of effort. As effort is a finite resource, it is considered better and easier to use one system rather than other applications which are more easily accepted by public users despite of their knowledge and qualifications.

Perceived usefulness and perceived ease of use are established in the e-commerce field through significant determinants. Results confirmed by the most influential e-business factors, such as senior managers of SMEs, the perceived usefulness and perceived ease of use of the TAM model. The results also confirmed Igbaria et al's (1995) study that used PCs and other factors through a website, in the context of small and medium enterprises.

2.5.3 Perceived Risk

The general concept of risk is society's great concern about coping with the modern life dangers. Perceived risk (PR) is commonly thought of as a felt uncertainty regarding possible use of a product or service with negative consequences. Bauer (1967) states that PR is formally defined as ‘‘a combination of uncertainty plus seriousness of outcome involved’’ and Peter and Ryan (1976) defined it as ‘‘*the expectation of losses associated with purchase and acts as an inhibitor to purchase behavior*’’ (Mauricio and Paul, 2003, p454). Mauricio and Paul (2003, p454) however gave it the e-service definition of "*the potential for loss in the pursuit of a desired outcome of using an e-service*". PR could enter information systems adoption decision when several factors of the decision create the following different aspects as defined by Mauricio and Paul (2003)

- Feelings of uncertainty
- Discomfort and/or anxiety
- Conflict aroused in the consumer
- Concern
- Psychological discomfort
- Making the consumer feel uncertain
- Pain due to anxiety
- Cognitive dissonance

The dissonance usually arises from the product evaluation having variations and combinations of costs and benefits, risks and utility. In this study context, the potential increased task performance efficiencies, are balanced with risks that include possible

different task performance related problems and the uncertainty of the internet as perceived as an unsecured communications medium. Figure 2.4 shows the Technological Intention to Use (TIU) factors that are used in this study

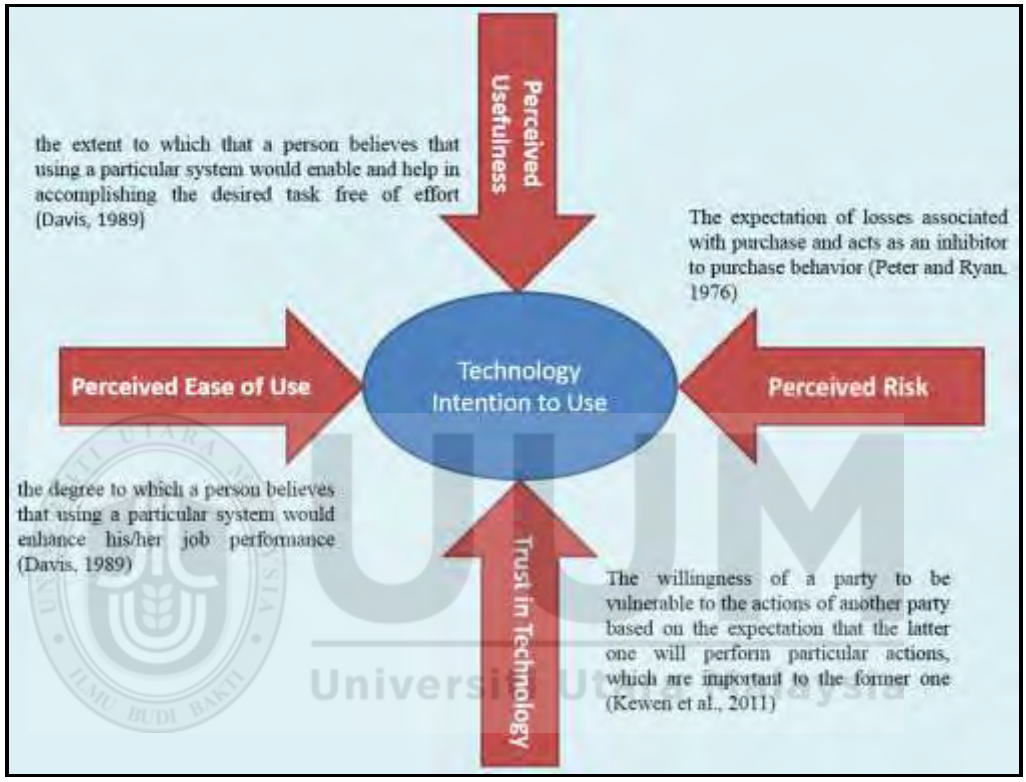

Figure 2. 4:

TIU categories developed for this Thesis

2.5.4 Trust in Technology

Trust in technology, should be included into the model in order to augment the present descriptors in explaining consumer adoption decisions in the electronic or mobile services context (Dahlberg et al., 2008). Moreover, trust in technology is considered as an important factor that has the power to influence a user's online behavior, especially in the e-services context. Kewen et al. (2011) defined trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the latter one will

perform particular actions, which are important to the former one". Unlike traditional offline trust, this new type of trust, which is called online trust, is generated through on individual's interactions with different online information systems (Bart, Shankar, Sultan, & Urban, 2005; Kewan et al., 2011). In recent years trust has attracted more attention and has been used and integrated into TAM under various circumstances, for example, in online purchase (Gefen, Karahanna, & Straub, 2003a, 2003b), in online gaming (Thompson & Liu, 2007), in e-banking (Suh & Han, 2002) and others.

2.6 The Sultanate of Oman E-Government Implementation

ICT is an important factor with an increasingly high profile in the nation's development process. Major barriers can be faced in the adoption and e-government services diffusion depending on the country's readiness in terms of infrastructure and its deployment of ICT (Alghamdi, Goodwin and Rampersad, 2011). ICT enables and facilitates the encouragement and engagement of discussion between different stakeholders of e-government rather than just passive language reception (Jose and ZainolAbidin, 2015).

Oman is part of the Gulf Cooperation Council (GCC) with a total area of 309,500 sq.km and a current total population of only3.992 million. The capital of the Sultanate of Oman is Muscat region and it is a monarchy. E-government in the Sultanate of Oman is part of the 2020 economic vision that was initiated and presented in 1995. Thus, it forms that backbone of the knowledge spread by that e-government. The first marketing strategy initiated for e-government in the Sultanate of Oman was called "*Towards Digital Oman*" in 2003. The Sultanate of Oman is considered and identified as a developing country

which is located on the south east of the Arabian Peninsula (Ministry of Information – Oman, 2008b).

Many forms related to e-services are provided for citizens for downloading and utilization. These include: school results, some college admissions, healthcare, training, employment, Omani culture, housing regulations etc. (Oman official website).

2.6.1 Sultanate of Oman e-Government Readiness

Various studies and analyses have been conducted by the United Nations regarding worldwide e-Government readiness and development. Table 2.5 and figure 2.5 show various readiness indices for Oman during 2010 to 2014 according to the UN Survey Results (United Nations E-Government Survey, 2014). In the table it is noticed that the e-Government ranking of Oman rose dramatically throughout this studied period. Oman's ranking rose 24 ranks in only 4 years, 18 ranks from 2010 to 2012 and 16 ranks from 2012 till 2014 with scoring HIGH EGDI index throughout the period (0.5-0.75). Moreover, the GNI score was high and reached 25250 with high level of income among citizens. However, human capital showed a slight decrease from 2012 to 2014 although it did not affect the dramatic enhancement in e-Government progress in the country.

Table 2. 5
Oman readiness indices during 2010 to 2014 (UN E-Government Survey, 2014)

No	Factor	2010	2012	2014
1	Total No. of Countries analyzed	192	192	192
2	Oman Position	82	64	48
3	Oman EGDI	0.458	0.594	0.627
4	Online index	0.368	0.667	0.732
5	Telecomm index	0.213	0.391	0.487
6	Human Cap index	0.80	0.722	0.662

7	E-Participation index	0.157	0.447	0.706

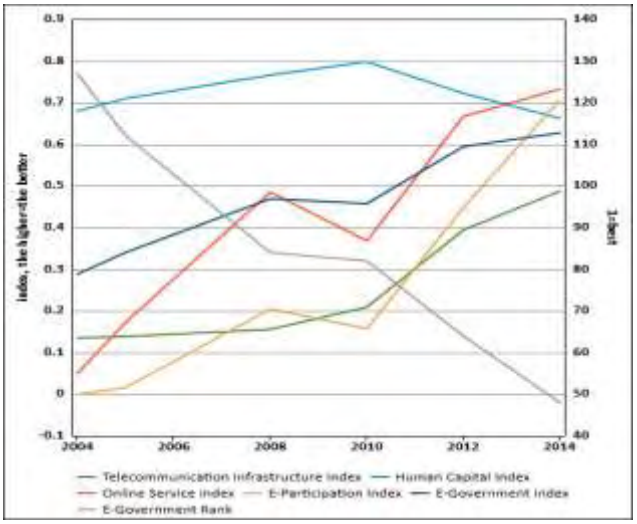

Figure 2. 5
Readiness indices of Oman during 2010 to 2014

Based on the above analyses and table, it is evident that the Sultanate of Oman is showing a remarkable improvement and development in its e-Government implementation. Various studies (Al-Busaidy and El-Haddadeh, 2011; Al Musawi, 2012; Osman, 2010; Al-Gharbi and Al-Kindi, 2010; Al-Rahbi, 2011) show that the Sultanate of Oman has developed international benchmarked strategies in order to develop and implement e-government initiatives that will enhance its relation with citizens. This is called government-citizens relationship.

Osman (2010) conducted an empirical study in the Sultanate of Oman about portals in Oman and the following points were observed and concluded:

- technical support issues in the portals are less frequently used
- important features that should be utilized by citizens are underutilized

It is therefore essential to assess the current situation and its associated investment with the available options for correction. These corrections should be connected and observed from citizens to make the system more citizen-centric. Although e-Government has currentlyachieved a successful implementation level, it faced many different challenges and it needs to put in more effort in order to achieve the desired goal (Al-Busaidy and El-Haddadeh, 2011). Al Musawi (2012) demonstrated that e-Oman comprises a wide range of different initiatives and services that are designed and created specifically for the following:

- Improving the government services efficiency
- Enhancing businesses activities
- Empowering citizens and employees with skills and knowledge
- Meeting society's different needs, requirements and expectations
- Directing Oman as a country towards becoming a Knowledge-based Economy.

Al-Gharbi and Al-Kindi (2010) by contrast stated that the e-Government purpose in the Sultanate of Oman is to:

- Improve the government-citizens relationship
- Provide continuous services round the clock
- Cut current available departmental hierarchies
- Reduce queuing in many agencies ministries' offices

- Speed up services by providing a single point contact location

The Omani government has developed a clear mission and vision for the e-Oman achievement; the key e-Oman mission statements begin with streamlining the government services to achieve Oman 2020 as a cycle (Al-Rahbi, 2011). The strategic visions are set from different developing societies for increasing and promoting awareness between local public citizens. Hence, the government of the Sultanate of Oman decided to establish a governmental agency to take care of the transformation from a traditional governmental services approach towards an e-government services approach, and it is called the Information Technology Authority.

The Information Technology Authority (ITA) is the body main responsible for the e-Government project in the Sultanate of Oman since it provides efficient services, integrates processes and enhance service efficiency. Additionally it is responsible for implementing, supervising and maintaining the Digital Oman Strategy (Information and Communication Technology Surveys Results, 2012).

The e-government and Information sector in the Telecommunications Regulatory Authority (TRA) is responsible for overseeing the process of e-transformation, following up the e-Government implementation plan, ensuring the promotion possibilities common infrastructure for government and raising readiness for the transformation of e-services provided by the government for clients. In the recent years, the Omani government has made a remarkable progress in the area of e-Government transformation due to the effort

targeted in developing ITA. The ITA is an autonomous body seeking and taking care of the successful implementation of Oman's e-Government. It emphasizes the role e-Government played in the process of sustainable development.

2.6.2 Electronic Oman (e-Oman)

Although e-government development is considered an Omani government priority the first essential step toward e-government building was in 2002. This was when the federal program was begun to adopt and develop e-Oman as a response to its associated challenges. Moreover, it mastered the capabilities of Information Technology (IT) in public administration to create the information society structure. The e-Oman Federal Program is designed to run for next two decades and it must overcome the backlog in the use and development of ICT. For this reason, the coordinator program for Communications in the Sultanate of Oman and the Ministry of Information Technologies took an active part implementing and monitoring the program implementation.

Various problems should be solved by the program in order to obtain unified information space in the country. Therefore, e-Oman is currently implementing a program to suggest activities that could enhance the efficiency of government and local authorities as well as presenting a formation for improvement of the relevant legal framework and staff capacity. With regard to projects that are developed under the program auspices, following directions should be addressed:

1. Creation of public authorities' portals at all levels.
2. Introduction of e-procurement technology.

3. Introduction of combined formation systems that would put all government information resources together at a one stop station.
4. Development of an e-administrative regulations system.
5. Creation of geographic information system.
6. Introduction of ICT in new fields like education and health.

While illustrating regional programs, significant importance is usually attached to different variety. For instance, there may be debate about the methodologies of solving actual ICT issues and problems through financial aid to regions and conceptual cooperation. Noting the concept of the e-Oman federal program statement, the Russian leadership understands the need to increase transparency. Government structures transparency improves the integration public sector processes. Thus, it is necessary to mention the obstacles and barriers that may affect the implementation of the effective federal target program "*Electronic Russia*". Although e-government has currently achieved a successful implementation level, it faced many challenges and it needs to put in more effort in order to achieve the desired goal (Al-Busaidy and El-Haddadeh, 2011).

Lack of a unified strategy at the federal government level in proposed projects cooperation with the regions would impact significantly on local projects and it will cause the transfer the positive acquired experience to become impossible. As representatives of regional administrations, "*all measures of acceptance are not related, patchwork, each department carry out its tasks. Ministry of Communications laid stress on creation of "physical" ICT infrastructure, laying optical fiber and LANs to create a*

certain level of security, and there is no overall strategy." On the other hand, the program currently involved fewer than half of the regions of the Sultanate of Oman although initially it was assumed and predicted that the first stage would only involve a pilot region project implementation with subsequent replications. The pilot, project stage is already completed however and in order to move to other e-government implementing mechanisms it should be noted that at present the e-Oman changes would contribute to a more effective implementation if they were organized in better and more professional manner.

2.6.3 SWOT and TOWS analysis of e-Oman

2.6.3.1 SWOT Analysis

"*SWOT analysis is an important analytical technique for understanding the performance and prospects of any issue under study through identifying the external and internal factors influencing it.*" (Alaaraj and Hassan, 2014) The internal factors include the first two parts which are strengths and weaknesses. The other two parts, opportunities and threats considering the surrounding environment and the external factors. These factors could influence the system's performance. Having identified these four factors, improvement and enhancement strategies may developed in order to enforce and overcome analyzed obstacles by reinforcing strengths, eliminating weaknesses, exploiting opportunities and countering threats (Alaaraj and Hassan, 2014, p.3).

2.6.3.1.1 Strength

The ICT sector in Sultanate of Oman developed rapidly from 2010 till 2014 when it rocketed from 0.21 to 0.49 over the period. This indicates that it is developing well and it has special treatment and follow-up. However, in the ICT ranking among gulf countries,

Oman is still last and its development index (IDI) is one before the last (ESCWA, 2014). Another aspect which is considered as strength is in e-participation where it increased dramatically over the same indicated period from 0.16 to 0.71. Besides the indicated aspects, the online base index is scoring high and increasing rapidly from 0.37 to 0.73 for the same period. E-participation and online index show that citizens are more engaged in the e-Government implementation and development and that the e-Government approach is moving towards citizens-centricity.

Chan et al. (2010), Vencatachellum & Pudaruth (2010), Abdulwahab & Dahalin (2011), Keramati & Chelbi (2011), Lessa et al. (2011), Alzahrani & Goodwin (2012) conducted different empirical studies in order to create a system facilitating e-Government that was more citizen-centric and to influence citizens and their intentions to use as the main goal. All of these indicated strengths of the e-Government in Oman as reflected in the E-Government Development Index (EGDI) and this enhanced Oman's e-Government ranking in the world. The EGDI shifted from 0.46 to 0.63 and Oman's e-Government ranking was enhanced from 82nd position to 48th position among the192 countries analyzed in the study (ESCWA, 2014).

2.6.3.1.2 Weaknesses

Innovation in Oman shows weak spots and it shows that it requires special treatment with better planning in order to develop and meet the desired goal. As indicated earlier, although ICT in Oman is developing it is still considered below the average and is still in the last position compared to the other GCC countries. As per the Knowledge Innovation (KI), Oman score is 5.87 and it is in the 4th position compared to GCC, just slightly

higher than Kuwait and Qatar. The same issue is clear in the Innovation Index (II) where it ranks 75 in the world and is last among GCC with efficiency of only 0.6%. This shows a severe issue that government should consider as being very important in order to eliminate it (ESCWA, 2014).

2.6.3.1.3 Opportunities

There is a bright spot in the Omani economic side in the surveys especially in the Knowledge-Based Economic Index (KBE) and the Economic Incentive Regime (EIR) where both show good position and development. As per the EIR the Oman is in the first position among the GCC countries with score of 6.96 in 2014, while the KEI score is 6.14 putting Oman in 3rd position after the UAE and Bahrain. These opportunities could be captured and exploited by enhancing the education index. That shows a blind spot in this area which decreases the knowledge index. The education index score is 5.23 and Oman is ranked 4th among GCC (ESCWA, 2014).

2.6.3.1.4 Threats

As indicated earlier, although IDI is increasing in Oman and its ranking worldwide has improved by 9 positions to move from 61st to 52nd position over the period 2012 to 2014 it remains slow when compared to the GCC and it needs to be improved and receive more focus and consideration. Another aspect is the Human Capital Index (HC). This indicator was showing good enhancement till 2010 when it started a downward trend and dipped from 0.8 to 0.66 over the period 2010 to 2014. This indicator is attached to the Gross Indicator Product (GDP) in the country and it shows fluctuation and instability readings over the period from 2009. Figure 2.6 shows GDP readings over the mentioned period (ESCWA, 2014; ITU, 2014).

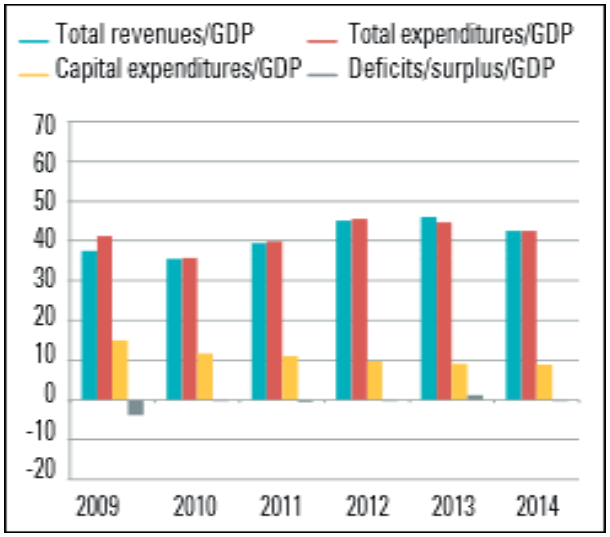

Figure 2. 6:
GDP of Sultanate of Oman

2.6.3.2 TOWS Matrix

Weihrich (1982) has developed TOWS as an extension of SWOT analysis to make it more applicable and reality grounded. It is used for analyzing the external environment (threats and opportunities), along with the internal environment (weaknesses and strengths) for drawing strategies and visions. It has a combination of the external and internal factors that would result a new strategy as shown in Table 2.6. Essentially, four different combinations are developed (Ravanavar and Charantimath, 2012; Weihrich, 1982; Alaaraj and Hassan, 2014):

- SO-strategies: this is where governments utilize and reinforce their internal strength factors for exploiting available opportunities in the external environment.
- WO-strategies: this is where governments reduce internal weaknesses that act as obstacles and barriers for external opportunities implementation or diffusion.
- ST-strategies: this is where governments use internal strength factors to minimize external factors threatening effects in performance or competitiveness.

- WT-strategies: this is where governments eliminate internal weaknesses to avoid any breakthrough or prevalence of external threats.

Table 2. 6:
SWOT and TOWS of e-Oman

SO	WO
Network strategy: Expanding available broadband capacity through the enhancement of investments in infrastructure and networks.	**Broad band speed strategy**: Conducting external innovations particularly in ICT would enhance the strategy and increase local education and experience
ST	WT
Human capital strategy: The government should focus on the empowerment of skilled human capital in order to enhance training and education within local citizens.	**Funding strategy**: Government must approach different kinds of funds in order to minimize weakness especially in ICT development in infrastructure and network.

2.7 Summary of chapter

There are many e-government definitions containing a variety of different elements. In fact, cultures, societal values and objectives all affect the concept. E-government is information technology used as a tool to help achieve the best possible governance. In fact, the e-government goal is the creation of more services and effective administrative tasks to meet the needs of customers and citizens. Management of the government-citizens relationship principle is the e-government basis and its objective is to remove paper transactions and to solve people's issues on computing sites. On the other hand, e-government in Arab and Middle Eastern countries will be more effective when all

agencies work together with transparency and credibility. Moreover, suggested teams must ensure that the work is done is an organized way which involves the organizational development of the administration and its work processes.

Public managers need to operate and work together in a common framework to maximize service efficiency, interoperability and to develop a organizations with shared infrastructure. Many countries are moving from a unilateral decentralized organizational model towards an integrated and unified model which aims to focus on single governmental portal services that generate greater transparency and more mobility. Today, the key question is not starting with "if" but with "how" developing countries can benefit from e-government. In Arab and Middle Eastern countries it is important to integrate the information and communication systems technologies so that e-governance leadership takes place. One of the most important aspects of e-government is that it should lead to a more efficient administration through the simplification work processes. The main objectives for Arab and the Middle Eastern countries are for full computerized administrative procedures: all corresponding aspects related to e-government must be activated electronically starting with the aspects that are most frequently used by citizens. Citizens' needs and requirements should always be taken as the starting and ending points of the implementation project and should be systematically evaluated through different surveys and polls.

The overall social life as well, as the Middle Eastern and Arab countries' economic development, can be better examined and processed if there is improved and better access

to government services. For instance, better and enhanced access to information in the public domain and better implementation of certificates and permits though online processing. In order to improve some of the e-government service, there is a need for better implementation of e-government standards and adherence to the e-government concept. In order to make this vision achievable there should be a comparative measure that can improve performance the reach international standards.

Government can move forwards in e-government development by keeping in mind the rising e-government demands by the public sector. Such policy measures could help the government in long term implementation and not only in current and short term situations. The e-government pillars are its infrastructure and its overall appropriate policy measures as well as the capacity to meet development needs.

The extensive e-government development initiatives have multiplied the effect in the Information Technology field. The adoption of technology allows governments and the public to improve the quality of government agencies services. The e-government initiatives are an important driver of internet growth and consequently, e-government portals could become a hugely effective consultation and communication mechanism. E-government is immediate, low cost and expeditious in harmonizing accounting so, encouraging collaboration between governments and municipalities in order to eliminate the drawbacks and shortcomings and strengthen transparency is an important aspect of the entire project.

CHAPTER THREE

CONCEPTUAL FRAMEWORK

3.1 Introduction

This chapter provides the framework for the research based upon the background for the research discussion in the literature review chapter. The main purpose of this study is to investigate the relationship between all the four main items (GOE, e-government, Technological Intention to Use and Behavioral Intention to Use). Integrating all the sections together using the proper theoretical approach from respected scholars in order to form the study's conceptual framework is the main purpose of this chapter. From this, hypotheses based upon the foundation of the related theories are. The chapter is suggested divided into the outline of different theories that are then integrated together to form the study's framework and then a hypothesis development from that framework. After that, the chapter will summarize all discussions

3.2 Underpinning theories

There are a number of theoretical approaches for examining government-citizens relationship and public citizens' intention to use (TAM, UTAUT, DOI, and SCT etc.). The principal theories that are used in this study are the Technology Acceptance Model (TAM) and the Task Technology Fit (TTF), checking the public intention to use from a technological perspective while using Social Cognitive Theory (SCT) for testing the public intention to use from a behavioral perspective.

3.2.1 Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh et al. (2003) analyzed eight different respected predictive models (TRA, TAM, TPB, PC, motivational model, innovation model of diffusion, social cognitive, and a combined theory of planned behavior and technology acceptance model) and used the results they gained as the basis for their outcome called the Unified Theory of Acceptance and Use of Technology (UTAUT) model. The UTAUT combines core determinants (effort expectancy, performance expectancy, facilitating conditions and social influence) and moderators (age, experience, gender and voluntariness of usage) into the TAM. The result from combining these determinants and moderators gives greater accuracy in predicting the usage of system, supporting Davis's (1993) stated conclusion that an extended TAM model could provide greater predictability in the use of a system. Figure 3.1 illustrates the UTAUT model.

This model is considered one of the most recent models in this field, but for the purpose of this study some parts like experience and voluntariness are irrelevant and not used. Thus, this model is not considered for the purpose of this study

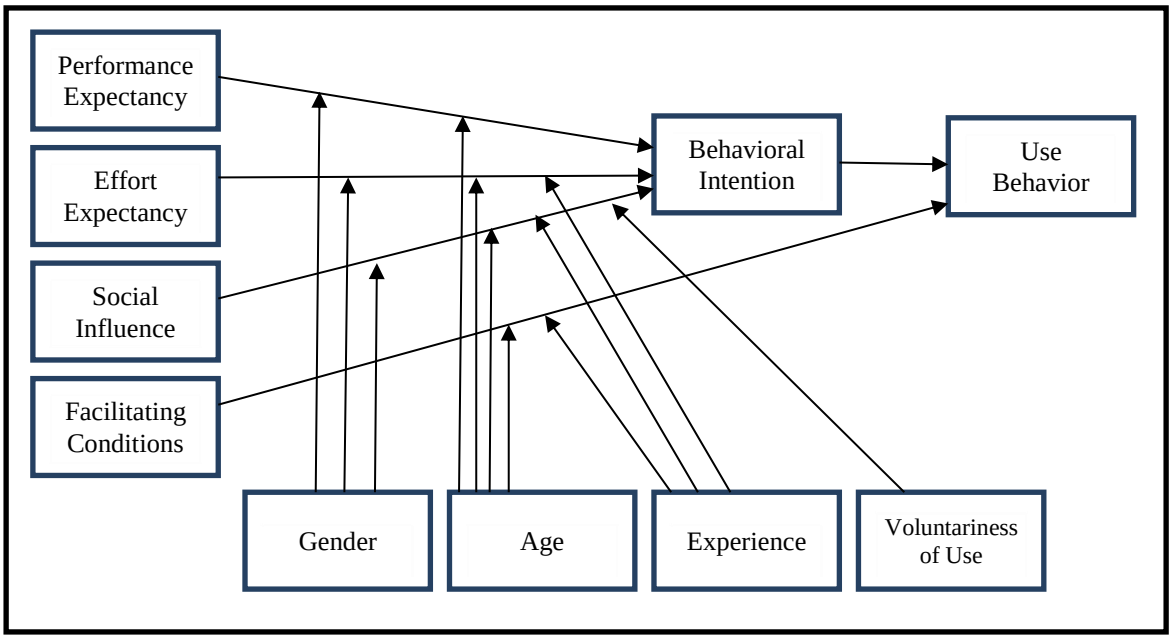

Figure 3. 1:
UTAUT Model (Venkatesh et al., 2003)

3.2.2 Attitude (DOI and TAM) Service Quality Theories

Diffusion of innovations (DOI) is a theory that examines and seeks to explain how, why and at what rate the new ideas and technology spread in any lifestyle category (Rogers, 2003). In general, DOI is a decision making process theory and in order to use it or plug it in to other field, DOI should be combined with other theories to be effective. For instance, Mirchandani et al., (2008) follows Gilbert et al. (2004) by combining the attitude (DOI and TAM) and service quality theories in order to help identify the success factors of websites for the adoption of e-government.

This theory is considered irrelevant to this study because it is considering the decision making approach while the study has a different approach

3.2.3 Implications of DeLone and McLean model

The DeLone & McLean Information Systems Success Model is commonly adapted for the measurement challenges of the modern e-commerce world. The six dimensions of the updated model that are information quality, system quality, service quality, usage intention with the system use, user satisfaction and net system benefits are a parsimonious framework for managing and organizing the overall e-commerce success metrics (Delone and Mclean, 2004). The DeLone and McLean Model stated that 3 perspectives mainly contributed to a successful e-business. These are the quality side of the model including information, system and service quality along with the most important category in business which is the users' and customers' satisfaction. The DeLone and McLean model gained strong and powerful theoretical and empirical support that qualified for global use in assessing information system success. Even so, it still requires verification in other cultures (Almutairi and Subramanian, 2005).

This model is commonly used in e-businesses and is more concerned with aspects of e-commerce than with e-government. Hence this model is considered irrelevant to the study and it will not be used.

3.2.4 Technology Acceptance Model (TAM)

A model associated with end-user use of technology as well as technology adoption is the Technology Acceptance Model (TAM). Davis' (1989) TAM was derived from Fishbein and Azjen's (1975) theory that is called the Theory of Reasoned Action (TRA). Davis' TAM model removed TRAs subjective norm factor, given itsuncertain definition and

included two distinct beliefs to predict users' attitudes. Davis's original TAM hypothesized that end-user motivation was influenced by three different associated factors: perceived usefulness (PU) and user attitude toward use and perceived ease of use (PEOU), Davis defined the factors PU and PEOU as follows:

3.1 PU is the degree to which a person believes that using a particular system or method would enhance his or her performance doing a specific job (Davis, 1989).

3.2 PEOU is the degree to which a person believes that using a particular system or method is smooth and easy

By 1996, a new modification on TAM was conducted by Venkatesh and Davis that resulted in the model diagram illustrated in Figure 5 where it is obvious that TAM reflects the direct influence of Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) on behavioral intention. Another significant finding of the research is concerned with the influence of external variables, other than system characteristics, on individuals' beliefs regarding a system's ease of use and usefulness (Chuttur, 2009).

The number of studies validating TAM's measures to predict Information Systems (IS) usage and adoption across contexts has grown over the past decade (Hsiao and Yang, 2011; Silva, 2007; Al Zahrani, 2011). In addition to individual research findings that have supported the TAM's predictability and reliability, two meta-analyses further confirmed its validity. The first meta-analysis, conducted by Thompson and Liu (2007), compared TAM's empirical studies' findings published in major journals after the year 1989 and

their results confirmed Davis' (1986) original findings that PEOU and PU were behavioral intent indicators and the additional variables inclusion was found to strengthen the predictive aspect of the core model capabilities. In particular, the variables of gender inclusion (Slyke et al., 2010), task technology focus (Gefen & Straub, 1997) and experience (Chircu, Davis & Kaufman, 2000) could improve the model's predictive capability for Behavioral Intention (BI).

A second meta-analysis conducted by King and He (2006) compared 88 different empirical TAM studies published between 1992 and 2004 and found that they were in line with Thompson and Liu's (2007) research. King and He concluded that although the relationship between PU and behavioral intent (BI) is highly reliable across many contexts, studies with moderators including age, experience, gender, subjective norm and task-technology fit resulted in other factors affecting IS usage predictability than the base TAM. Other research conducted by Taylor and Todd (1995) extended the TAM to include user experience. Both studies indicated that the experience level of the user strengthens the relationship between beliefs, attitude, and actual IT usage. The TAM has been cited and extended more than any other model in the research field which indicates the importance of its effect on the information systems field (Chuttur, 2009). Since its publication in 1989, the TAM has been the base instrument in many empirical studies surrounding end-user adoption. Reasons behind its popularity include the model's understandability, simplicity and predictive capability (King & He, 2006). In addition, Davis' model was applied in a voluntary setting. Most organizations today would

mandate key technologies use rather than making its voluntary, so, the model may need to be tested in that setting.

3.2.5 Task Technology Fit (TTF)

Task-Technology Fit (TTF) (Goodhue & Thompson,1995) is proven to be applicable in many cases of blended learning instruction (Akkoyunlu & Soylu, 2008) and has been referred to as an essential and important factor in computer-assisted and online environment betweens, technology adaptation, the e-services environment and in this study's case, e-government, for assisting learning (McGill & Hobbs, 2008). By introducing these different constructs, aims to link the e-government system adaptation with the government-citizens relationship and the public intention to use. By doing this, a broad picture of the relation between government and citizens can motivate users to utilize the e-government system in blended learning instruction (Lin and Wang, 2011). TTF has been applied mainly at the governmental and organizational level rather than at the end user or customer level (Aljukhadar, Senecal and Nantel, 2014)

This study uses and adopts the task-technology fit (TTF) perspective as it is a powerful model for analyzing adoption and use behavior in a specific context (Benbasat & Barki, 2007). TTF has been widely applied in different information systems research (Lee, Cheng, & Cheng, 2007; Junglas, Abraham, & Watson, 2008) and this study adopts TTF as the guiding perspective for checking, developing and validating a task-technology fit construct in e-government settings. Lin (2012) argued that TTF is one of the earliest constructs used to capture users' perceptions on adoption and use behavior (Lin, 2012).

3.2.6 Social Cognitive Theory (SCT)

Social cognitive theory (SCT) refers to "*a psychological model of behavior that emerged primarily from the work of Albert Bandura (1977; 1986)*" (Denler, Wolters and Benzon, 2014, p.1). SCT was initially developed with an emphasis on social behavior acquisition. SCT continues to emphasize and highlight that learning occurs in a social context and is learned through observation. SCT has been broadly applied in many diverse areas of human action, particularly organizational behavior, athletics and health and has been applied extensively to understanding class room motivation, learning, and achievement (Denler, Wolters and Benzon, 2014)

SCT is considered as a learning theory that states that people learn partly by observing and imitating others and also by positive reinforcement and it posits that behavioral change is affects many aspects like personal factors, internal dispositions and environmental influences. Thus, behavioral change is considered as a complex process influenced by both internal and external factors (Xu, Yoon and Tourassi, 2014). Moreover, self-efficacy, outcome expectations and goals within a particular career domain are parts of the emphasis that are within SCT (Dahling, Melloy and Thompson, 2013).

This study discusses the behavioral intention to use, from citizens' prospective, using SCT as the base of this moderator due to its interaction behavioral aspect

3.3 Research Framework of E-Government

Researchers have used different approaches or views while attempting to solve a particular problem in different aspects or situations. Generally, most studies were conducted with different approaches, perspectives and objectives. Rogers (1976) examines people's reactions and how a few people acknowledge and accept change on an individual premise while others are affected by administration, social influence or social gathering. Learning and investigating such different behavior in citizens will help to support clients to be effective when executing new technology or service. Figure 3.2 explains the relationship between the perceived usefulness and perceived ease of use with attitudes to further the intention of the user for the usage.

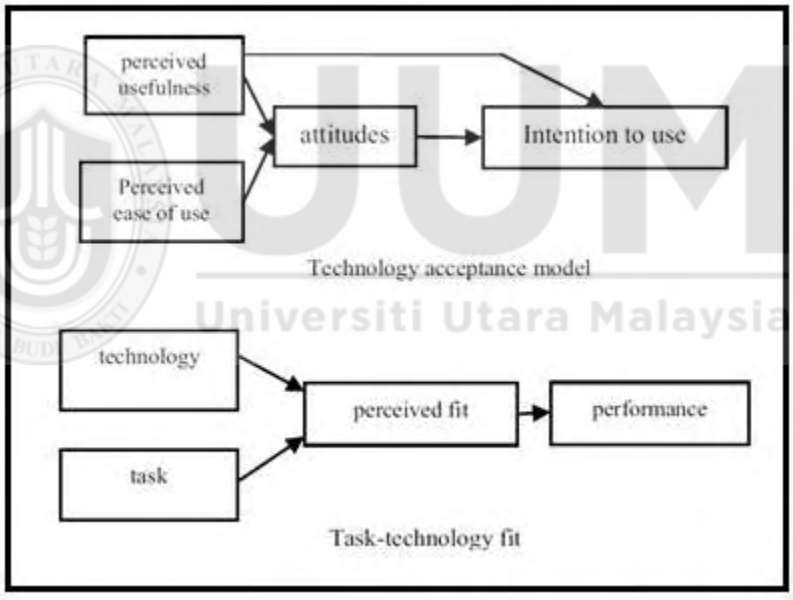

Figure 3. 2
TAM & TTF (Lu et. al, 2011)

According to Lu et. al (2011) the Technology Acceptance Model (TAM) and the Task Technology Fit (TTF) can be combined together in order:to get the model illustrated in figure 3.3:

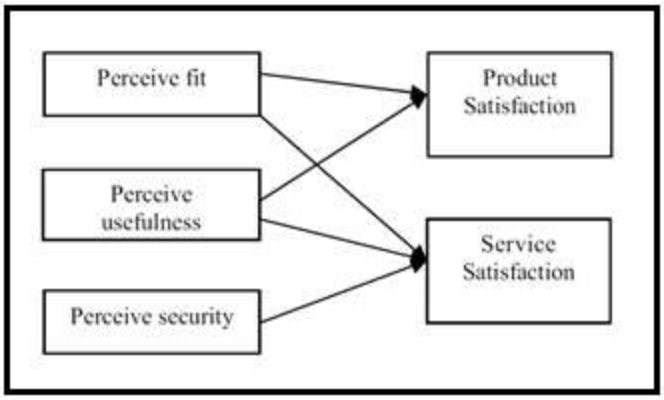

Figure 3. 3
TAM & TTF Conceptual model (Lu et. al, 2011)

Lu, et al. (2011) developed this framework for businesses where there are products and services to be provided to customers. However, for the purpose of e-government, only services are provided to citizens. Product satisfaction is therefore irrelevant to the study purpose and so the model has been changed to figure 3.4 after removing the product satisfaction part:

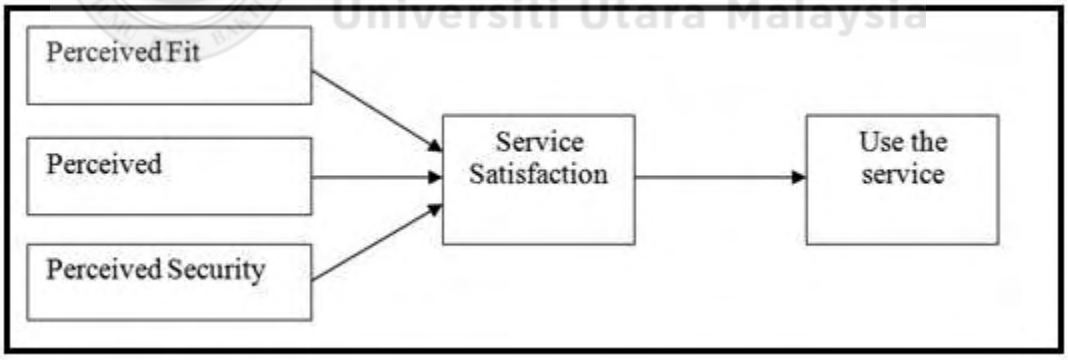

Figure 3. 4
TAM + TTF for e-government

On the other hand, Zhou (2008) suggested a Social Cognitive Theory (SCT) model which takes the behavioral point of view. As illustrated earlier, SCT is considered as a learning theory that states that people learn partly by observing and imitating others and also by

positive reinforcement and it posits that behavioral change affects many aspects like personal factors, internal dispositions and environmental influences. Thus, it is used in this study to investigate the behavioral intention to use by citizens. This theory is essential to the study is examining the behavioral intention to use and it is illustrated in Figure 3.5.

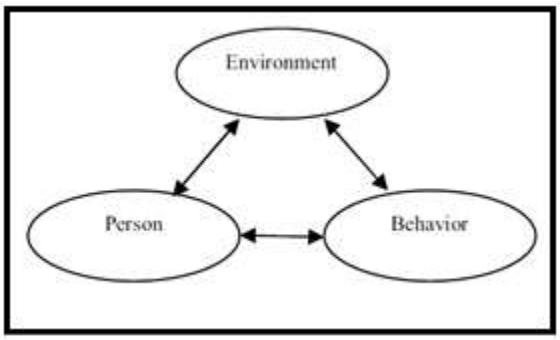

Figure 3. 5
Social Cognitive Theory (SCT) model (Zhou, 2008)

Therefore, due to all theories and models listed above, the report is suggests the following figure 3.6 model:

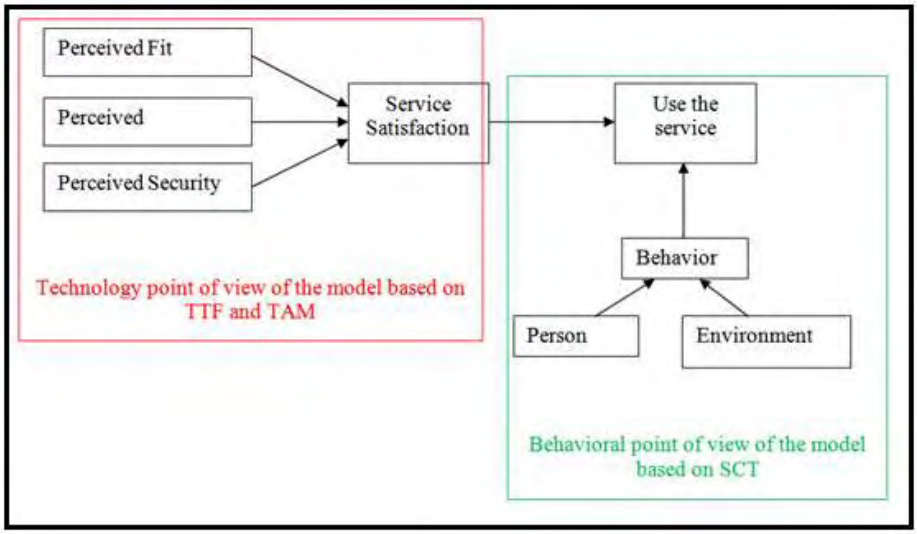

Figure 3. 6
Combine TAM, TTF and SCT

The combined, modified theories of TAM and TTF operate as the first moderator of the intention to use technology, but work in tandem with the SCT moderator of behavioral intention. Figure 3.7 is shows the research's framework overview and it contains integrated dimensions from the Service Quality Model (SERVQUAL). The SERVQUAL model identifies certain criteria by which customers, or in the case of e-government citizens evaluate the quality of service. Donnelly et al. (1995) furnished five major dimensions the SERVQUAL:

(1) **Tangibles:** The appearance and the availability of physical facilities, equipment, personnel and different communications materials.

(2) **Reliability:** The ability to perform and maintain the promised service in dependable and accurate ways.

(3) **Responsiveness:** The ability and willingness to help customers and in the e-government case, the citizens and provide prompt and fast service.

(4) **Assurance:** The competence and the availability of the system along with its credibility in providing a valid and secure service.

(5) **Empathy:** Approachable, accessible, easy to use and effort taken to know customers' requirements and needs.

Due to the above discussion, the study works in congruence with the TAM, TTF and SCT models formed together as moderating parts of the final relation between e-government (IV) and GOE (DV). Figure 3.7 is illustrates the research framework and considers the independent variable (IV), Moderators and dependent variable (DV).

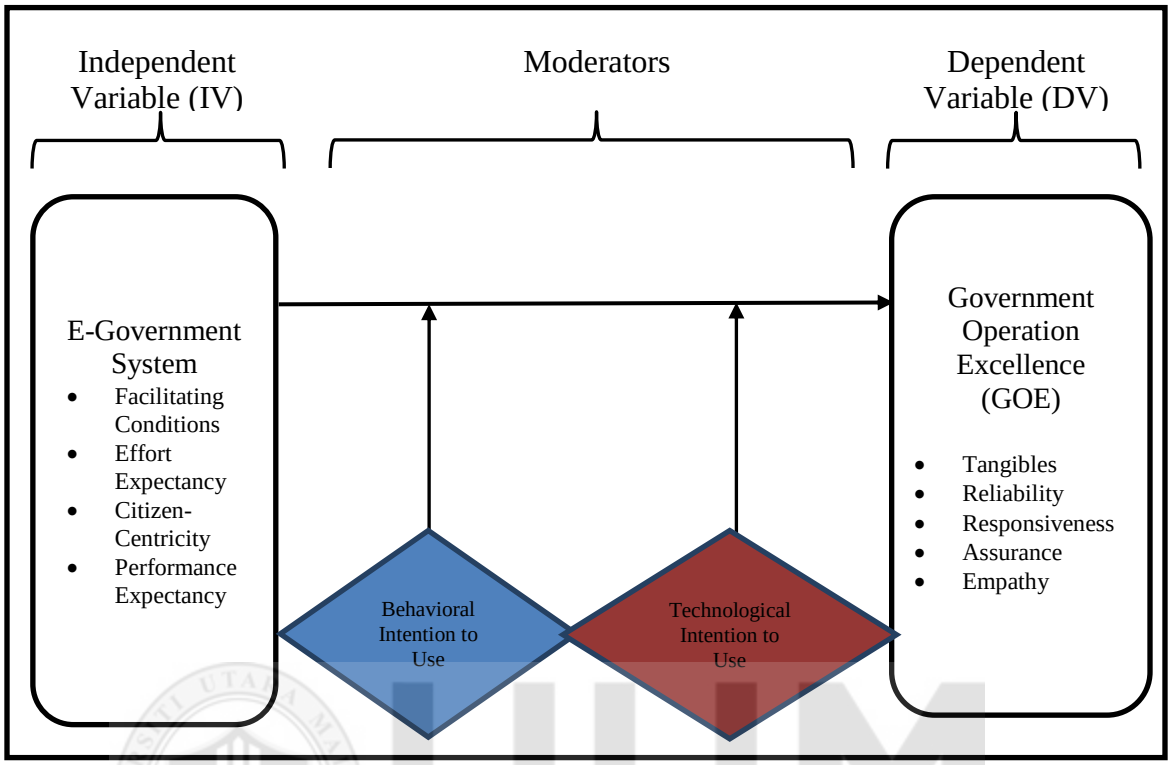

Figure 3. 7:
Research Framework

The dependent variable in this study is the government operation excellence (GOE). This refers to the best approach in delivering governmental services to public citizens. The measures of the GOE were adapted from previous studies by various scholars (e.g. Sharma and Mishra, 2015; Papadomichelaki and Mentzas, 2012; Sá, Rocha and Cota, 2015; Osman et al., 2014, Alavi and Majidi, 2015) using the SERVQUAL approach to measure and indicate the quality of the services provided to the nation and then find the proper approach in fixing or improving the areas required for improvement.

The independent variables of this study comprise the E-government systems that include the facilitating conditions, effort expectancy, with citizen-centricity and performance

expectancy all from the citizens' point of view (Alshehri, Drew, and AlGhamdi, 2013; Alshehri et al., 2012; Aasi et al., 2015)

There are also two moderating variables are in this study. The first moderator is Technological Intention to Use (TIU) and it checks the intention of citizens towards the government's new service approach. Many researchers have used TAM, TTF or both of them together in evaluating such intention (e.g. Ayo, Mbarika, and Oni, 2015; Hidayanto et al., 2014). The other moderator is the Behavioral Intention to Use (BIU) which considers behavioral aspects like trust, social influences, image etc. as the principal drivers of such intention from the citizens' perspective. Researchers like Rana, Dwivedi and Williams (2015) and Turner, Brandenberg and Stewart (2013) conducted studies using SCT in indicating and studying the behavioral intention of citizens towards e-government.

Having two moderators instead of only one make the study better and easier especially when distinguishing between two parts of the influencers in citizens. Distinguishing between the technological and behavioral aspects that effect a citizen's intention is essential and must be studied in order to investigate their relation towards conducting a better governmental services approach that will achieve governmental operational excellence (Lu et al., 2011).

3.4 Hypothesis Development

This part provides the propositions based on the relationships between the E-Gov system factors and the GOE factors moderated by technological and behavioral intention to use.

The focus of this study is to examine the effect of e-government on GOE. The main objective of this study is to identify the relationship between different intentions to use, either technological or behavioral factors, in the relationship between e-government factors and GOE either as moderators or mediating variables. As mentioned earlier, the variables used in this study are: (1) e-government factors (Facilitating Conditions, Effort Expectancy, Citizen-Centricity and Performance Expectancy); (2) TIU factors (Perceived Easy to Use (PEU), Perceived Usefulness (PU), Perceived Risk (PR) and Trust in Technology (TiT)); (3) BIU factors (Image (I), Social Influence(Si) and Perceived Behavioral Control (PBC)); and (4) GOE factors which are under SERVQUAL. A summary of hypotheses statements is given below:

H1: There is a significant relationship between an e-Government system and Government Operation Excellence.

H2: There is a significant relationship between different e-Government factors and e-Government.

H3: Technological Intention to Use moderates the relationship between an e-Government system and Government Operation Excellence.

H4: Behavioral Intention to Use moderates the relationship between an e-Government system and Government Operation Excellence.

3.5 Summary of chapter

This chapter presents different e-government definitions along with what a working definition should entail. E-government service maturity is expected to continue to change attitude and evolve in keeping with changing stakeholder requirements. This maturation method suggests that e-government idealizations should not be limited to the current available services and applications and should enhance them to better more suitable and more advanced services. Any definition or framework that seeks to explain or describe e-government phenomena must be sufficiently robust and descriptive to accommodate the activities and applications evolution without requiring a total reconstitution of the frameworks or models previously developed. The IT infrastructure platform effectively enables rapid information and data propagation throughout the e-government network to all different connected parties, which increases both the quality and quantity of information received. This unique combination of information quality and quantity, increased efficiency and organization-wide distribution and connectivity creates an effect that goes beyond the government operations support.

The use of IT creates the potential to change and reinforces the transformational e-government parts which offer a suitable medium for the realization of different and various electronic ideas, goals, and purposes. Such a framework could have the power to enhance and motivate sharing and easy reference across political, ideological and technological boundaries. Thus providing a common basis for informed discourse about issues relating to the e-government agenda is an important aspect. E-government identification goals and purposes in effective coordination and organization of plan will

require solid and clear understanding. Setting clear goals and a shared mission statement is potentially one of the most significant acts that would empower management to undertake reforms. It is a difficult task, given the many variables involved in constructing theory, to endorse any one specific method. In addition, the researcher introduced an e-government framework and several different e-government models. Finally, this chapter outlined some e-government advantages for developing countries in general and for the Sultanate of Oman in particular.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction

This chapter discusses the research methodology for this study. It presents a systematic and organized procedure that enables the investigation of the relationship between the different variables attached, namely e-government, technology intention to use, behavioral intention to use and government operation excellence.

The main aim of this research is to study and investigate the moderating effect of technology acceptance and behavioral acceptance on the relationship between e-government and government operation excellence in the Sultanate of Oman. Therefore, the methodology used in analyzing this impact is spelled out in this chapter along with the measurement of variables, the instruments used in the survey and the procedure of data collection. In addition, the population and categorized sampling methods related specifically to the public sector in the Sultanate of Oman are highlighted.

4.2 Research Design

Zikmund (2000) defined research design as a master plan that specifies the different methods and procedures for collecting and analyzing the information required. However, in order to achieve the research purpose, a suitable customized research design should be developed. According to Kumar (1996), research design is basically defined as an investigation structure, strategy and plan that is conceived in order to obtain research answers to questions, issues or problems. The plan for this study is considered as a

complete research program or scheme. It includes an outline of the researcher's desired goal and achievement from the writing of hypotheses and targeted operational implications to the final data analysis (Kerlinger, 1986).

Thyer (1993) stated that "*Traditional research design plan would complement the research works, which results in changing the activity that could be measured, in selecting a sample of interest to study and the collection of data to be used as a base to test hypotheses, and in analyzing results*" Al-Zu'bi (2012, p.173). Based on these definitions, this study follows the mentioned systematic process to achieve the desired purpose using a suitable customized design. The selected methodology of research is quantitative research in order to reach large sample of respondents (Sekaran & Bougie, 2011) along with qualitative research to show the managerial point of view in the current e-government approach and to elaborate more on the citizens' point of view. Finally, the results obtained from both data analysis procedures and methodologies are interpreted and conclusions are drawn and discussed.

4.2.1 Types of research design

Dillman (2000) suggested some online types of survey approach namely: mail survey, telephone interview, personal interview and internet survey. The questionnaire survey refers to a set of different multiple choice questions or items carefully structured and assembled in order to be completed by participants (Payne and Payne, 2004). By answering questions in the survey by participants, it will provide data to researchers for analysis and discussion.

Zikmund (2000) stated that there is no better way or method than the survey, but there are weaknesses in each of the tasks. Romano (1989) noted that science research selection should not be affected or driven by regularly built popular scientific insights but should be given the benefit related to the required search. A researcher must choose the most appropriate methodology from among available research techniques in order to achieve the desired objectives. It is usually difficult to choose the optimal method. Thus, the researcher has to make a tradeoff and comparison between the advantages and disadvantages for each method or technique (Al-Zu'bi, 2012).

4.2.2 Sampling Design

The identified samples should be in accordance with many aspects like: frame of sample, validity, reliability and measurements. For instance, research can be mainly classified into three different categories according to its nature (Kumar, 1996; Sekaran, 2000; Zikmund, 2000). Furthermore, these categories may be descriptive or exploratory and data can be collected by observation, questionnaire or interview (Gay, Mills & Airasian, 2003). The aim of this thesis is to investigate the relationship of different variables relationship which places it in the category of descriptive nature research.

According to Al-Zu'bi (2012), there are generally eight major designs in investigating Information System (IS) researches, i.e., forecasting, surveys, field experiments, laboratory experiments, simulation, case studies, action research and phenomenological studies. Al-Zu'bi (2012) found that the majority of studies use the field studies approach is 64% while 25% use the experimental approaches. Only 6% are case studies and field experiments account for the remaining 5%.

From the above discussion, it appears that survey questionnaire research is the most appropriate method for this study. The decision is due to the following:

1. It is most closely associated with the close approach and better suits the selected research strategy (Orlikowski and Baroudi, 1991).
2. Survey questionnaires are more suitable for the type of targeted data in terms of attitudes, perceptions and beliefs and their capability to include large-scale data collection.
3. Ease in reaching the participants who live in scattered locations and in including large-scale data. This study is interested in and focused on gaining a broad overview of the adoption and it would be difficult to gather date using other methods.

Sekaran (2003) suggested that the researcher or scholar can improve and enhance the response rate by following-up, simplifying the questionnaire and designing a well-structured questionnaire.

Since the population of this study consists of the public citizens in the Sultanate of Oman who have different backgrounds in education and who are located across a wide geographic area, using an electronic survey could be more appropriate. Generally, the electronic survey has several advantages such as the respondents can answer the questionnaire at their own convenience costs and there is wide area coverage. Indeed, nowadays electronic surveys can be conducted using smart phone applications and

services by sending survey links. The wide spread use of such phones by Omani citizens made it easy for them to complete the survey at little cost and in a short time-frame.

4.3 Population of Study

The target population for this study is citizens in Sultanate of Oman. The unit of this study consists of citizens in business sectors, employees in government sectors, citizens without work. In the Sultanate of Oman, there are 42 government departments and governmental agencies, with the population of 3,992 million citizens according to the last conducted census in 2014 (NCSI, 2014). Roscoe (1975) took 10% as rule of thumb while choosing a sample of a big group. Weiberg and Brown (1977) argued that Rescoe's decision will give an error of 3% to 4% and it is not worthy to compromise in power, time and money in order to reduce the error to 1% or 2% (Hill, 1998). Table 4.1 is illustrates regions of Sultanate of Oman with the population.

Table 4. 1
Population in different regions in Sultanate of Oman (NCSI, 2014)

Sr. No.	Region	Population	Percentage of Population	Percentage of expects	Total Local Population	Population of Omani Citizens aged from 18-60 Years
1	Muscat	1,210,480	30.3%	42.7%	470,916	314,672
2	Batinah	1,016,394	25.4%	17.3%	716,758	285,969
3	Sharqiya	509,453	12.8%	9.8%	339,717	145,642
4	Dakhliya	403,012	10.1%	5.3%	311,216	110,560
5	Dhofar	377,506	9.5%	10.9%	188,718	105,245
6	Dhahirah	185,596	4.6%	2.8%	137,100	51,028
7	Buraimi	99,836	2.5%	2.9%	49,608	28,703
8	Musandam	40,936	1%	0.8%	27,080	10,631
9	Wusta	39,813	1%	1.1%	20,761	10,631
TOTAL		3,992,893	100%	100%	2,261,874	1,063,081

4.3.1 Sampling Technique

The probability sampling is the sampling applied in this research since the sample will be taken from general public citizens in Oman. It should be taken as a random sample from the public without priorities being given to any citizens more than others. The data collection procedure was mainly gathered by sending SMSs to a random sample of local citizens aged from 18 to 60 years which makes the filter only a demographic filter without any limitations. The reason behind this focused and bounded demographic filter is that after the age of 18 citizens can apply for different forms of services from government like a driving license and or an employment card. Retirement in the country is after the age of 60. According to Krejci and Dan, Morgan (1970), a minimum of 500 respondents is required in order to generalize the outcome result in a country. Hence, a minimum sample size of 500 is necessary for the research analysis of this research in order to generalize the outcome for the complete country (Krejci and Dan, Morgan, 1970). In consequence, the telecommunication agent that acts as a broadcaster to the two main telecommunication companies in Oman (Oman mobile and Ooredoo) was appointed to send 10,000 random SMSs registered in their system in Sultanate of Oman.

It is essential to select and choose an appropriate sample size that will establish a reliable research that ensures generalizability (Sekaran, 2003). Various elements should be taken into account while choosing the sample size of research. For instance, Roscoe (1975) gave a rule of thumb in choosing the sample size which states that “a sample size larger than 30 and less than 500 is appropriate for most researches”.

4.3.2 Data Collection

As mentioned earlier the researcher has appointed a telecommunication agent that had the capability to send bulk categorized messages (SMS) through mobiles to citizens in the Sultanate of Oman.

After applying only a demographic filter as mentioned above, the data received from all around the country was found to be insufficient from most of the regions and the researcher decided to repeat the data collection, applying another geographic filter targeting the regions where most data was received, Muscat, Al Dakhliya, Al Sharqiya and Al Batinah.

Therefore, an agreement was made with the telecommunication services agency which authorized it to broadcast SMSs to local registered Sim-cards. In this agency there are three main filters other than the demographic filter which was described earlier by age, Respondents are filtered by geographic area which considers the location of the participants within the Sultanate of Oman and specifically within which region (wilayah). This filter was included in order to consider only regions that had participated most in the pilot test done earlier. The agreement was to include Muscat, Al Dakhliya, Al Sharqiya and Al Batinah. Along with these two filters there is also the registration filter which indicates the registered company of the Sim-card. As was indicated earlier, there are two telecommunication services providers in Sultanate of Oman which are Omantel and Ooredoo. Hence this filter gave the survey more options. It could be required to get data from one service provider only or it had the option to distribute specific SMSs to each

service provider. This filter was not requested and not required for this survey because it is not part of the criteria in research methodology and this filter will not contribute to the survey

Hence, the telecommunication agent was advised to send messages according to the age and selected region. The data collection procedure was by sending SMSs to a random sample of local citizens aged from 18 to 60 years and within the four suggested regions of the country (Muscat, Al Batinah, Al Sharqiya and Al Dakhliya) which made the filter demographic and geographic. This method of data collection is called Push SMS application system and Naqvi, Naqvi, AlShihi and Ali (2011) stated that a Push SMS application system is basically when a message is being sent from any agency like application, person, company or governmental agency to the users, customers or citizens. However, it is considered as a one way communication method where the receiver is not forced to reply or answer the SMS and it is mostly used for marketing and broadcast information. In other words, it is a mobile application that initiates a message. This message helps to reach a wider audience informing them about certain activities, products and events.

Throughout the negotiation with the telecommunication agency, the message was found to be long in terms of number of letters and thus the calculation of message with the agency became a double message to each participant in terms-of SMS size. Thus, the number of total participants became only 5000. This decision was agreed by both parties because the total targeted answers was a minimum of 500.

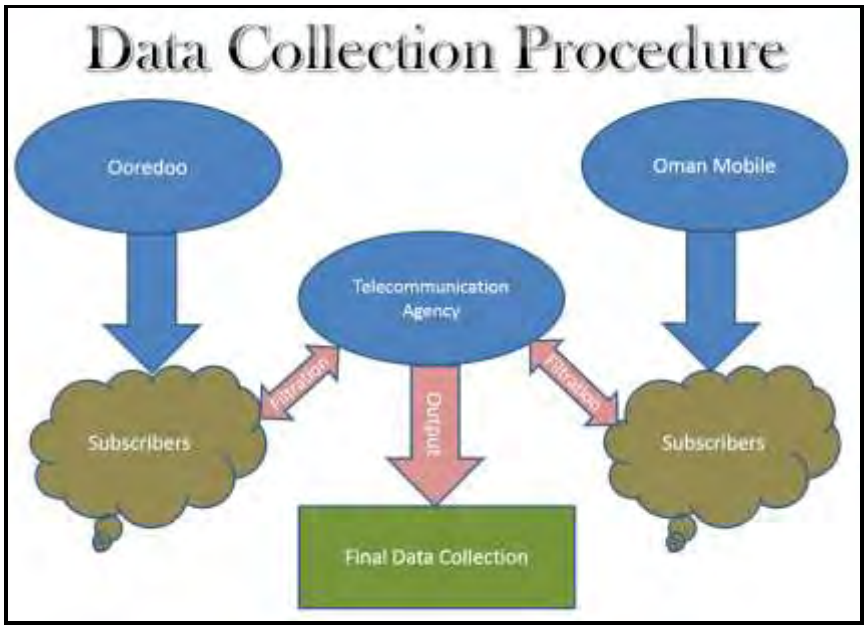

Figure 4. 1:

Data Collection Procedure

4.3.3 Data Analysis

Data analysis is a fundamental aspect of research and should be adopted in order to answer the current study questions listed in the research. The PLS SEM approach is used in the collected data analysis in this study. Specifically, the software application SmartPLS (Ringle *et al*., 2005) was used in the analysis and presentation of output results. There are however many programs that can be used to process analysis of data like the Statistical Package for the Social Sciences (SPSS), SmartPLS, SAS, STATPAK or Excel. SPSS is considered the most popular program. SPSS and SmartPLS were chosen for use this study for their simplicity and completeness (Sekaran, 2003).

4.4 Research Instruments

4.4.1 Measurement of Variables

A structured questionnaire which consists of close ended question seems to be feasible to gauge citizen perception on the different perspectives of this study. These perspectives are categorized into four main categories: e-government, Technology intention to use, Behavioral intention to use and Government operation excellence. However, to ensure that the questions asked can be easily understood and represented the research main variables, the researcher conducted face validity checks before a pilot test of the instrument. These meetings were conducted with experienced people and with decisions makers from different organizations or ministries with different responsibilities and positions in the country. Some of them have high positions in the governmental agencies while others have positions in the private sector and others have their own business but what is common to them all is that they have knowledge of and interactions with the current e-government in Oman. These meetings were very useful in revising and strengthening the questions, as they are targeted at public citizens who have different levels of education level and points of view.

Since data analysis is affected by the quantitative measurement levels of the variables, this will establish a classification in these variables according to their nature, namely: nominal, ordinal, interval or ratio (Fonarow, 1992). In line with the definition offered by Fonarow (1992), the demographical items in the survey include nominal and interval variables, but the four main variables of the research are considered ordinal because their attributes are ordered and numbers were assigned to these attributes to assist the data

analysis. Thus, this research adopts a four-point Likert scale rating to measure the four main variables; e-government, technological intention to use, Behavioral intention to use and government operation excellence. These scale ratings are (1) strongly disagree (2) disagree (3) agree (4) strongly agree. A four-point scale assists the researcher to evaluate and extract information that is specific and direct to the point. Most studies in the literature have found that a scale of four is preferred, for instance, Garland (1991) suggests that the way that people would espond and react to a balanced Likert type scale that has no mid-point is considered as content specific. Moreover, Parker, Tupling and Brown (1979) used a four-point Likert scale because it is more suitable in assessing normal and numerous populations without the mid-point and Chang (1994) found that there is virtually identical criterion validity of coefficients for a four-point Likert scale compared to higher Likert scales.

The questionnaire designed for this study comprises five main sections. The first section is the general questions about the respondent in terms of age, gender, working place and general knowledge about the e-government in Oman. The second stage is the specific questions of e-government in Oman in all of its dimensions. The next section is about the moderator technology intention to use and then the other moderator that is behavioral intention to use. The final section concerns government operational excellence.

4.4.2 Dimensions of Variables

Indeed, intention to use in both technical and behavioral terms towards e-government and among the public citizens in society is considered essential if societies are to prosper and if government is to function better and be more effective in reaching government

operation excellence. Since this research is more concerned with the public intention to use in e-government, the measurement is related to Facilitating Conditions, Effort Expectancy, Citizen-Centricity and Performance Expectancy.

To measure e-government as on independent variable (IV), items are selected based on four main components including 14 questions. As per the moderating components, Technological intention to use and Behavioral intention to use contains three main components in Technological intention to use which are: Perceived Easy to Use (PEU), Perceived Usefulness (PU) and Trust in Technology (TiT) including 12 questions. Additionally, there are five components in Behavioral intention to use. These are PBC, Social Influence (SI), Image, Subjective norms and compatibility including 11 questions. On the other hand, the dependent variable (DV) which is the government operation excellence (GOE) is measured using SERVQUAL theory that has five components which are Tangibles, Reliability, Responsiveness, Assurance and Empathy including 19 questions. The researcher used SERVQUAL in this study because it is designed to measure service quality as perceived by citizens or customer (Asubonteng, McCleary and Swan, 1996). Moreover, the SERVQUAL approach is suitable to check and measure the quality of service in the public sector, including the government operation excellence in e-government services (Wisniewski, 1996; Wong et al., 2013; Osman et al., 2014). Service quality is recognized as one of the most essential factors for sustainability aspects in every organization and one of the most important driving forces for an organization's achievement (Santos, 2003). Service quality in general represents the comparison between citizens' or customers' expectations of how the service provider should perform

and the service performance that customers perceive (Parasuraman, Zeithaml, and Berry, 1988). The most extensively used method and scale for assessing service quality is SERVQUAL (Li and Suomi, 2009; Alanezi, Kamil and Basri, 2010). In order to improve branches, agencies, offices and ministries, SERVQUAL standards are assessed through constant steps towards improvement (Alavi and MAJIDI, 2015). In order to evaluate the operation excellence and the service quality of any illustrated or provided services, researchers should use SERVQUAL for measuring the gap analysis between customers' or citizens' perception and their expectations against the actual service quality (Donnelly et al. 1995; Parasuraman et al. 1988)

4.4.3 Items Selection

Several studies and researches have measured the impact and the effect of e-government on good government and governance to obtain GOE, providing a solid background in developing the research questionnaire. Thus, the following tables 4.2, 4.3, 4.4 and 4.5 illustrates items that have been selected and adopted from previous related studies in order to fit the objectives of this study

Table 4. 2

Summary of E-givernment Measurement instrument variables and sources

	Dimension	Items	No. of items	Author
E-government	**Citizen- centricity**	- By using current e-Government system, my visits to governmental offices reduced - By using current e-Government system, I have no problem with the languages being used - By using current e-Government system, It is easy to get help in the system in communication examples call, live chat, email etc.	3	(Gilmore and D'Souza, 2006)
	Facilitating Conditions	- Government is giving high support in promoting and put e-government approach as priority - I have the required resources and equipment in order to use e-government system like internet, computer, electricity etc. - Internet cost is reasonable and affordable - Internet in my city is reliable for e-government services use	4	(Al-Shafi, 2009; Al Zahrani, 2011)
	Effort Expectancy	- By using current e-Government system, my governmental tasks became easier - By using current e-Government system, governmental tasks take less time than the old manual system. - By using current e-Government system, no complication or difficulty is associated with its use -By using current e-Government system, Learning to operate along with dealing with it is easy for me	4	(Barua, 2012)
	Performance Expectancy	- By using current e-Government system, my productivity increased - By using current e-Government system, traditional manual errors and mistakes are reduced. - Overall, I am satisfied with the way the system is currently	3	(Barua, 2012; Al-Shafi, 2009)

Table 4. 3

Summary of Technology Intention to Use Measurement instrument variables and sources

	Dimension	Items	No. of Items	Author
Technology intention to Use	**Perceived Easy to Use**	- By using current e-Government system, it is easier to communicate with government agencies than the old manual system - By using current e-Government system, it is easier to get information than the old manual system - By using current e-Government system, it is more flexible to interact with service providers than the old manual system	3	(Karacapilidis, Loukis and Dimopoulos, 2005; Su, Chang and Wang, 2011; ALKeshar, 2008; Alsaghier, Ford, Nguyen and Hexel, 2009; Ayyash, Ahmad and Singh, 2011)
	Perceived Usefulness	- Current e-Government system is enhancing tasks effectiveness - Current e-Government system improves my performance in accomplishing tasks	2	(Al Zahrani, 2011; Alsaghier, Ford, Nguyen and Hexel, 2009; ALKeshar, 2008)
	Perceived Risk	- By using current e-Government system, I have no problem with personal information privacy - I am confident that current e-Government system will perform as expected - Relying on the provided information in current e-Government system would be risky	3	(Alsaghier, Ford, Nguyen and Hexel, 2009)
	Trust in Technology	- I think that current e-Government system website are secure all the time - I think that current e-Government system website have a stable internet access all the time - I think that current e-Government system website can be accessed all the time - I think that current e-Government system website are reliable all the time	4	(Ayyash, Ahmad and Singh, 2011)

Table 4. 4

Summary of Behavioral Intention to Use Measurement instrument variables and sources

	Dimension	Items	No. of Items	Author
Behavioral intention to Use	**Image**	- I think that the users of e-Government services have more prestige and knowledge - I think that the users of e-Government services have a higher profile than who do not use them - I think that using e-government services would improve my image -I think that using e-government services would improve my style of doing things	4	(Al Zahrani, 2011)
	Social Influence	-My family thinks that using the current e-Government services system is a great idea -My friends/colleagues think that using the current e-Government services system is a great idea - From social media I know that using e-Government services system is a great way of doing government services - I feel very proud to work with the current e-Government system as it is considered the most efficient intra-governmental system to obtain services	4	(Al Zahrani, 2011; Barua, 2012)
	Perceived Behavioral Control	-I need to have the required knowledge for using the current e-Government services system - I need to have the required ability for using the current e-Government services system -I think that using the current e-Government services system is a great idea	3	(Al Zahrani, 2011)

Table 4. 5

Summary of Government Operation Excellence Measurement instrument variables and sources

	Dimension	Items	No. of Items	Author
Government Operation Excellence (SERVQUAL)	**Assurance**	- E-government system has convenient access to different services and inquiries - E-government employees have the knowledge to answer a citizen's questions - E-government employees are always courteous	3	(Hassanzadeh, Sharifabadi and Derakhshan, 2010)
	Tangibles	- E-government system has a relevant information resources collection - E-government system has physically comfortable access to the system - E-government system has a modern and regularly maintained system - E-government system and staff make customers feel safe in their transactions	4	
	Reliability	- E-government system provides services as promised - E-government system provides services at the promised time - E-government website delivers the right and wanted services - E-government website performs its service accurately	4	
	Responsiveness	- E-government system has the readiness to respond to a customer's request - E-government system has the willingness to help users - E-government system has prompt service to citizens - E-government website tells me what to do if the service cannot be offered	4	
	Empathy	- E-government staff understand the needs of users - E-government employees deal with citizens in a caring fashion - E-government employees give users individual attention - E-government employees have the users' best interests at heart	4	

4.5 Method of Analysis

The research's data analysis involves basically two stages; preliminary analysis and advanced analysis.

4.5.1 Preliminary Analysis

It is important and essential conduct preliminary analysis at an early stage of the survey in order to measure the required response rate of the conducted survey. Basically, this is calculated from number of questionnaire distributed and questionnaires returned.

In this instance, the survey's questionnaire consisted of 61 questions (using 4-points Likert scale) written by both English and Arabic languages. There may have been a problem with some citizens regarding the language, given the targeted respondents of this study were normal citizens who have different education levels. This makes the language barrier an obstacles for some of them. Their diversity of background, results in a tendency for respondents to have difficulty in understanding the questions. The questions were therefore designed in bilingually (English and Arabic) and simple sentences were used.

After that, diagnostic checking of missing data, incomplete responses and outliers was conducted. Statistical evidence, according to Byrne (2010) has defined outliers as any observations or answers that are numerically distant and differ if compared to the rest of the dataset (Morawska et al., 2014). Whereas, Hair et. al. (2010) categorized this as the observations and answers that have unique characteristics and differ distinctly from other observations.

Chi-square statistics table was used for this research as the threshold value for determining the research empirical optimal values. Hair et al. (2010) argued that it is recommended to use the Mahalanobis because it can be simply achieved by running a normal simple linear regression using the selection of a newly created response number. It is counted as dependent variable (DV) and after that selects all other measurement items apart from the demographic variables as independent variables (IV). Then, other tests like normality and linearity are conducted in order to observe whether the gained data set of the research is well-modeled and normally distributed or not (Sekaran & Bougie, 2011; Hair et al, 2010). Descriptive analysis is part of the preliminary analysis which is concerned with the demographical determination features of the sample along with the descriptive statistics of all variables in the research.

Moreover, testing the measure of goodness in this research is essential in determining the measures validity and reliability. Hair et al. (2010) differentiate between both tools (validity and reliability), where they define reliability as "the extent to which a variable or a set of variables is consistent in what it is intended to measure. It is more concerned how the measurement occurs". The Cronbach's alpha coefficients (α) indicate the measured factors' internal consistency reliability in this research, which should be above 0.70. Validity is defined as "the extent to which a measure or set of measures correctly represents the concept of the study, thus it is concerned by how well the concept is defined by the measure" (Hair et al., 2010) and it is measured by explanatory factor analysis (EFA). The first step for analyzing and checking the obtained data is by

conducting multiple correlation tests and then multiple regression tests like, Factor test by ANOVA. In the research, all of the mentioned analyses are conducted by SPSS.

4.5.2 Advanced Analysis: Structural Equation Modeling (SEM)

The second stage of analysis which is the advanced one, is an essential test especially in terms of research proposed hypotheses through advanced SEM analysis using SPSS software (Wothke et al., 2010). SEM combines different and multivariate elements models such as regression analysis and simultaneous equation modeling (SEM) (Wothke et al., 2010).

In addition, SEM is efficient and is essentially used as an analytic tool for variables in a moderation or mediation that are represented by a latent variable. This is the case in this research where Technological intention to use and Behavioral intention to use are moderator variables (Alaaraj, 2015). In addition, SEM provides goodness-of-fit indices for evaluating hypothesized model validity by indicating the extent to which the model fits into the data (Wu & Zumbo, 2007).

This research is based on four main latent variables, e-government, technological intention to use and behavioral intention to use (both as moderators) and the leading target goal which is the government operation excellence where each one is composed of different constructs. When drawing the relationships between these different targeted variables, a measurement model is obtained and to assess this model measuremnt, several methods were used in order to check the convergent validity among construct items such as items testing factor loading on the respective constructed and evaluated by

Confirmatory Factor Analysis (CFA), investigating the Composite Reliability (CR) and the Average Variance Extracted (AVE) (Hair et al., 2010).

4.6 Summary of chapter

This chapter discussed the research methodologies that are usually employed in such situations for analyzing similar specific issues. A quantitative approach has been chosen in order to analyze the thesis subject and it used a mail survey method but with a more modern devices and methods. The mail questionnaire survey in this thesis has been achieved by using SMSs and messaging apps in smartphones in order to reach participants in different locations, areas and regions in the country. Since these phones are readily available it was easier to use and participate in the survey using them than by using more traditional e-mails via computers and laptops.

The survey did not cover all citizens in Sultanate of Oman but only targeted citizens between 18 to 60 years old. The reason behind this is that citizens younger than 18 years old do not require government services in general and by law in Oman they will not start work before that age. The same situation applies for citizens older than 60 years because this is the retirement age in the Sultanate.

The survey covers only local Omani citizens and excluded expatriates because this thesis is meant for Omanis and the usual services offered by the government are for locals. Expatriates may obtain governmental services through their local sponsor. As per the sampling procedure, a simple random method was conducted and as per the data analysis Structural Equation Modeling (SEM) was conducted.

CHAPTER FIVE

RESEARCH FINDINGS AND DISCUSSION

5.1 Introduction

This chapter elaborates the findings obtained from the survey as the main tool employed for data collection in this study. The findings, analyzed via SPSS software are discussed in terms of the response rate, response bias and the descriptive statistics in the quantitative research questionnaire and the profile of the respondents in the qualitative research questionnaire. The chapter then explains the diagnostic checking that consists specifically of detecting and analyzing missing data, outliers, normality, and linearity. Reliability and factor analysis measurements were conducted while confirming the research data used. Validity is further discussed in this chapter. This chapter also presents the factor analysis for the exogenous and endogenous variables and a further elaboration of how goodness of fit indices for both structural and measurement model were approved. Then, the hypotheses testing of results are summarized based on their nature of effect (direct and indirect) among the research constructs. Discussions of the findings are presented at the end of the chapter.

5.2 Analysis of Survey Response

As indicated earlier, the researcher communicated with main telecommunication services provider in Oman which are Omantel and Ooredoo and made on agreement with them as a telecommunication agent that have the approval and capability to send bulk categorized messages (SMS) through mobiles. The data collection procedure was by sending SMSs to a random sample of local citizens aged from 18 to 60 years in four regions in Oman. The

researcher requires 500 respondents minimum in order to generalize the outcome result in Oman. Therefore, the agreement with the mediator organization was to send 10,000 random SMSs using the attached demographic and geographic filters and the target was to get a minimum of 500 answers for the questionnaire. However, due to the length of the message presented by the researcher to be broadcasted, the bulk sender organization agreed with the researcher to send 5000 SMSs because they would be counted as two messages to each respondent as mentioned earlier in chapter four.

5.2.1 Response Rate

As per the quantitative approach of survey, from 5000 distributed questionnaires, 1257 questionnaires were returned. Thus, the study's response rate is 25.14%. However, after checking the obtained responses only 552 of the returned questionnaires were usable and applicable for analysis because the rest did not answer all questions or they skipped some of them. So, the usable response rate is 12%.

5.2.2 Non-Response Bias Test

As mentioned earlier, the study's data were collected during the period from 4th Jul 2015 to 4th Aug 2015. Over this period, the survey questionnaires were sent to different citizens between 18 to 60 years old in a random selection by an agent company for communication companies in Oman to all regions of Oman.

5.3 Diagnostic Checking

5.3.1 Missing Data

It is essential to detect and omit incomplete and missing data from obtained quantitative research prior to conducting descriptive analysis (Alaaraj, 2015). Otherwise, missing data will cause the system to run improperly and ineffectively. APPENDIX 2 shows that all data illustrated in the discussion and analysis chapter are complete and no missing data remained to be detected.

5.3.2 Checking for Outliers

In order to indicate outliers, The Mahalanobis factor is used as it is considered a simple linear regression output (Hair et al. 2010). Since there are 60 questions in the used questionnaire with 5 questions that are demographic and general, Chi^2 is found to be 94.47 for 56 degree of freedom and for Chi^2 P=0.001. All values found to be above this value will be therefore emitted and exempted from the received responses. The number of exempted responses was therefore 52 and the remaining cleaned data consisted of 500 returns.

5.3.3 Normality Test Results

It is assumed that for any research, the variables should normally be distributed in in order to avoid skewing and distortion of their relationship in terms of interest and significance in the test results (Alaaraj, 2015). Hence, a Histogram would provide score distribution information on the continuous variables. Figure 5.1 shows Histogram and it demonstrates that, all bars are close to normal. There is therefore no violation in normality assumption (Pallant, 2011)

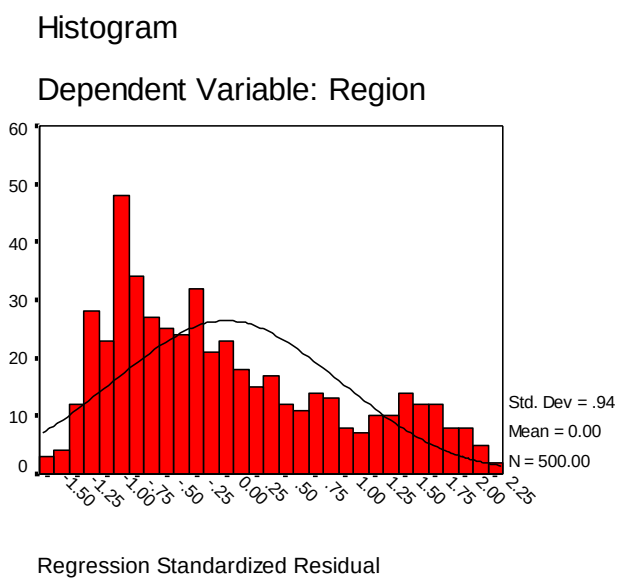

Figure 5. 1
Normality Test

As per the Standard Deviation, it shows the spread of the data and it is known as the data distribution average distance from the mean. If the SD is close to the mean it will be low and it will be high if it is high elsewhere. Skewness and kurtosis is recommended and acceptable when it is located within ±3. APPENDIX 3 shows that all the data are within the acceptable range (Cao and Dowlatshahi, 2005)

5.3.4 Linearity Test

Linearity was evaluated using a residule and partial regression plot and is displayed in Figure 5.2. It can be obsreved from both figures that non-linearity data is not a valid issue in the study data.

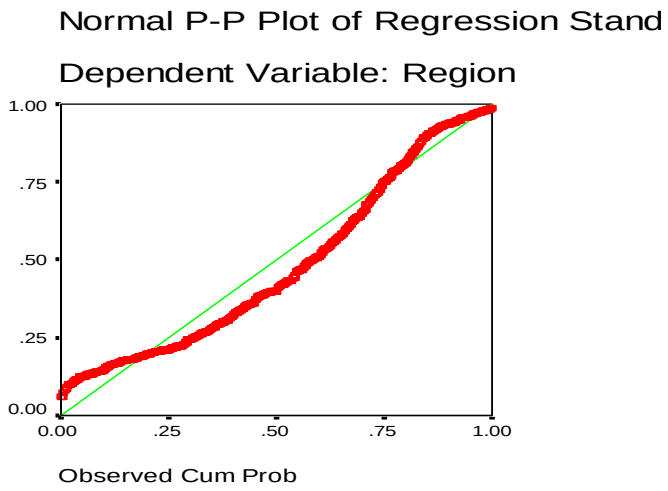

Figure 5. 2
Linearity Test

As per the homoscedasticity, it is known that the residual variance should be homogeneous across predicted values level. If the significant value is more than 0.05, the homogeneity is assumed to be non-violated and it is accepted. Table 5.1 is shows the ANOVA test which indicates that all values are within the acceptable range (greater than 0.05).

Table 5. 1
ANOVA Linearity Test

		Sum of Squares	df	Mean Square	F	Sig.
EGOV	Between Groups	0.625	3	0.208	0.634	0.594
	Within Groups	163.142	496	0.329		
	Total	163.767	499			
M1TIU	Between Groups	1.190	3	0.397	1.000	0.393
	Within Groups	196.775	496	0.397		
	Total	197.965	499			
M2BIU	Between Groups	0.795	3	0.265	0.959	0.412
	Within Groups	137.130	496	0.276		
	Total	137.926	499			
GOE	Between Groups	2.513	3	0.838	2.096	0.100
	Within Groups	198.250	496	0.400		
	Total	200.763	499			

5.4 Descriptive Analysis

5.4.1 Demographic Distributions of the Respondents

As stated earlier, the survey did not cover all citizens in Sultanate of Oman but it covered only citizens between 18 to 60 years old. The reason behind this is due to the fact this range of citizens is expected to have knowledge on the government services and they have the most experience dealing with the government services. As summarized in Table 5.2, the respondents' demographical data are based on gender, age, region, working place and the knowledge about e-Oman.

Table 5. 2
Demographic Distributions of the Respondents

Variable	Demographic Features	Frequency	Percent %
Gender	Male	435	74.36
	Female	150	25.64
Age	18-30	251	42.95
	31-40	257	43.93
	41-50	64	10.90
	51-60	13	2.22
Region	Muscat	289	52.36
	Batinah	99	17.93
	Sharqiya	84	15.22
	Dakhliya	80	14.49
Working Place	private personal business	96	16.42
	Private sector	208	35.63
	Public sector	281	47.95
Knowledge about e-Oman	Yes	394	67.40
	No	191	32.60

Although the survey was distributed randomly in all four regions of Sultanate of Oman most of the respondents were from the capital (Muscat) which alone score about 50%. This shows the capital's vision and interest in knowledge and the new system of e-government approach. As shown in Table 5.2, the majority of respondents were males (75%) while females scored 25%. This is considered normal and rational in Oman because Oman is a more traditional country where females do not like to involve themselves in unknown areas or reply to an unknown person's message.

The results also show that most of the respondents were in the two ranges from 18 to 40 years old, which reflects the knowledge, interest and reaction towards the new system by the younger generation compared to the elders.

In terms of work place, it was almost normally distributed between government sector and private sector and the number of participants with private business or not working was considerably less. The reason behind that is that most Omanis prefer to have a regular work duty and to conduct private business as a second job. Hence, the results are rational and expected.

Regarding the knowledge about e-Oman and its associated services and uses, the results received were higher than expected because only about 30% indicated any absence of knowledge. The reason behind that is maybe due to the mix and overlap between e-government and e-services or maybe because some people feel embarrassed to show their absence of new knowledge or systems.

5.4.2 Evaluation of the Model Quality

SmartPLS, Version 2.0 M3 was used in this research in order to perform data analysis. This software is commonly used in management and marketing science (Henseler et al., 2009) where it is usually analyzed and interpreted in two stages (Hair et al., 2011) First the measurement model, which is also known as outer model, would be tested in order to ensure validity and reliability. More precisely, multi-item constructs measurement properties including convergent validity, discriminant validity and reliability, would be examined by conducting a Confirmatory Factor Analysis (CFA). Multi-co-linearity testing would also be a measurement model part for formative measurement adapted in the second order construct. Secondly, a proposed structural model would be analyzed by R2, effect size (f 2) and the model predictive relevance (Q2). Bootstrapping of 5,000

subsamples would be used for testing the study hypothesis. Figure 5.3 shows the original research framework using SmartPLS.

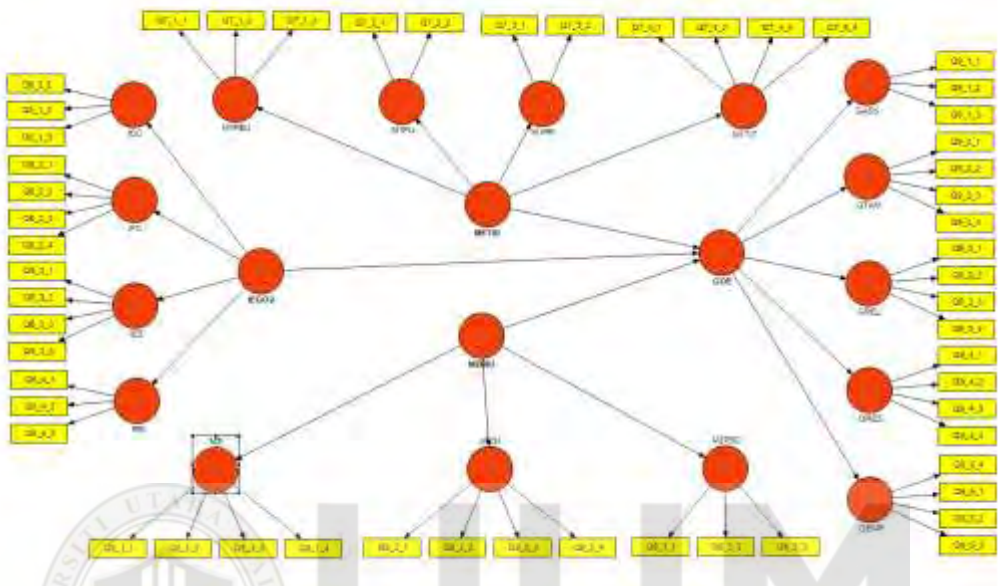

Figure 5. 3
Original Research Framework

5.4.3 Measurement Model

In order to validate the measurement model used in this study, the indicators load would be determined to know how well it performs on the theoretically defined constructs. Examining the outer model would ensure the constructs that are designed to measure, thus ensuring that the used survey instrument is reliable. This study determines each individual item reliabilities' loadings to the respective variables. For this part, a confirmatory factor analysis (CFA) was conducted for assessing the measurement model validity. Thus, for the purpose of measuring goodness testing, two main criteria were used those were validity and reliability.

5.4.3.1 Validity Test

Test validity test is the extent to which a corresponding test accurately measures what it is intended or supposed to measure. According to the American Educational Research Association (AERA) a validity test refers to the degree that evidence and theory support the desired interpretations of the test scores that are entailed by proposed uses of tests (AERA, 1999). Validity is considered as the most important issue in testing because it give more concern to the test results meaning (Popham, 2008). The other name of Validity is the evaluation's correctness, whether in theoretical or practical terms (Pendergrass et al., 2003). This test is essential in this study in order to check the validity of the measures compared with the required ones. There are three validity analysis types. Those are content validity, construct validity (includes convergent validity) and criterion validity (includes reliability analysis).

5.4.3.2 Content Validity

Content validity refers to the validity assurance, the extent to which a measure represents all the required and desired facets of a given item. Content validity was applied and used to assess the accuracy degree between measures set and the interest concepts (Hair et al., 2010). This is applied in the study in order to check the validity in the contents prior to distribution of the study survey. The questionnaire was pretested for validation of its content and language. The method for this presentation test was described in Chapter 4 where the representatives were two lecturers with doctoral degrees from the university and nine personnel from high management levels in the country who had been engaged in e-services and e-government system for a long period. This step was conducted in order to ensure the questions' appropriateness and clarity.

5.4.3.3 Construct Validity

Construct validity is defined as the degree that a test measures what it claims to be measuring (*Brown, 1996;* Cronbach and Meehl, 1955; Polit and Beck, 2012). Sekaran and Bougie (2010) explain that Construct validity testifies the wellness of the obtained results. According to Ramayah Lee and In (2011), the instrument should be theorized. This aspect can be achieved by assessing both convergent and discriminant validity and specifically by looking at the respective loadings and cross loadings of the output data. According to Hair et al. (2014a), gained indicator loadings should be greater than 0.60. This test essentiality is illustrated by checking and comparing the targeted and the desired goal against the achieved and output. Based on the above recommendations, this study used a cut-off value of 0.6 as being significant. Table 5.3 shows the cross loading test of the output data.

The data that should be obtained should have the loadings of any indicator on its specific assigned latent variable and these must be higher than its other loadings on all other latent variables in the same row and column. From table 5.3 it can be observed that these requirements were achieved and met successfully. The highest loadings in each rows and columns are written in Bold for easier indication.

Table 5. 3
Cross Loading Test

	CC	FC	EE	PE	PEU	PU	PR	TIT	IMG	SI	PBC	ASS	TAN	REL	RES	EMP
q6.1.1	**0.86**	0.43	0.75	0.70	0.67	0.63	0.58	0.54	0.43	0.42	0.28	0.58	0.65	0.65	0.63	0.54
q6.1.2	**0.78**	0.41	0.56	0.53	0.53	0.56	0.49	0.49	0.35	0.39	0.27	0.51	0.54	0.49	0.49	0.50
q6.1.3	**0.85**	0.55	0.69	0.69	0.65	0.61	0.58	0.57	0.46	0.40	0.27	0.64	0.66	0.67	0.67	0.60
q6.2.1	0.64	**0.79**	0.69	0.68	0.61	0.60	0.60	0.58	0.40	0.33	0.23	0.58	0.64	0.65	0.62	0.58
q6.2.2	0.17	**0.67**	0.21	0.22	0.22	0.21	0.23	0.24	0.25	0.26	0.26	0.19	0.20	0.19	0.19	0.18
q6.2.3	0.23	**0.69**	0.29	0.28	0.24	0.29	0.29	0.30	0.21	0.16	0.13	0.27	0.27	0.29	0.30	0.28
q6.2.4	0.25	**0.72**	0.34	0.32	0.31	0.30	0.32	0.31	0.20	0.18	0.19	0.30	0.28	0.31	0.32	0.29
q6.3.1	0.76	0.59	**0.92**	0.82	0.78	0.74	0.65	0.61	0.51	0.47	0.34	0.65	0.73	0.72	0.71	0.65
q6.3.2	0.74	0.56	**0.91**	0.81	0.77	0.73	0.64	0.58	0.51	0.47	0.34	0.64	0.72	0.70	0.68	0.63
q6.3.3	0.69	0.59	**0.90**	0.78	0.71	0.69	0.65	0.60	0.48	0.41	0.30	0.64	0.69	0.68	0.66	0.60
q6.3.4	0.70	0.57	**0.85**	0.74	0.71	0.68	0.67	0.61	0.42	0.45	0.32	0.63	0.69	0.67	0.65	0.61
q6.4.1	0.70	0.57	0.81	**0.89**	0.75	0.74	0.64	0.62	0.51	0.45	0.28	0.65	0.71	0.70	0.70	0.65
q6.4.2	0.65	0.51	0.76	**0.88**	0.76	0.77	0.68	0.67	0.53	0.49	0.34	0.69	0.75	0.73	0.71	0.68
q6.4.3	0.71	0.61	0.78	**0.89**	0.74	0.71	0.71	0.65	0.43	0.38	0.26	0.71	0.73	0.78	0.74	0.68
q7.1.1	0.70	0.53	0.79	0.81	**0.94**	0.78	0.69	0.64	0.49	0.49	0.33	0.69	0.76	0.75	0.73	0.68
q7.1.2	0.69	0.52	0.76	0.79	**0.93**	0.80	0.68	0.65	0.49	0.49	0.34	0.68	0.74	0.73	0.71	0.66
q7.1.3	0.69	0.56	0.77	0.77	**0.92**	0.78	0.67	0.64	0.50	0.48	0.31	0.70	0.73	0.72	0.72	0.68
q7.2.1	0.69	0.56	0.78	0.81	0.82	**0.93**	0.72	0.67	0.57	0.53	0.37	0.71	0.78	0.76	0.73	0.68
q7.2.2	0.65	0.55	0.75	0.78	0.81	**0.94**	0.69	0.63	0.57	0.54	0.38	0.70	0.76	0.74	0.72	0.66
q7.3.1	0.67	0.55	0.73	0.77	0.72	0.77	**0.90**	0.67	0.53	0.48	0.39	0.70	0.76	0.76	0.75	0.69
q7.3.2	0.50	0.49	0.55	0.57	0.57	0.60	**0.87**	0.69	0.43	0.40	0.31	0.60	0.58	0.57	0.59	0.58
q7.4.1	0.61	0.45	0.61	0.64	0.64	0.65	0.70	**0.82**	0.46	0.42	0.30	0.60	0.62	0.60	0.61	0.63
q7.4.2	0.51	0.50	0.53	0.55	0.53	0.55	0.58	**0.87**	0.42	0.36	0.28	0.51	0.56	0.54	0.55	0.52
q7.4.3	0.59	0.55	0.62	0.69	0.64	0.65	0.68	**0.91**	0.46	0.41	0.30	0.64	0.69	0.65	0.64	0.65
q7.4.4	0.59	0.50	0.62	0.68	0.64	0.69	0.75	**0.88**	0.49	0.46	0.36	0.70	0.69	0.66	0.67	0.64
q8.1.1	0.42	0.38	0.46	0.46	0.44	0.50	0.47	0.43	**0.82**	0.55	0.41	0.43	0.46	0.45	0.46	0.45
q8.1.2	0.43	0.38	0.46	0.49	0.46	0.50	0.45	0.44	**0.82**	0.49	0.38	0.43	0.46	0.47	0.48	0.46

	CC	FC	EE	PE	PEU	PU	PR	TIT	IMG	SI	PBC	ASS	TAN	REL	RES	EMP
q8.1.3	0.35	0.24	0.35	0.38	0.34	0.41	0.38	0.36	**0.81**	0.57	0.45	0.37	0.40	0.37	0.37	0.39
q8.1.4	0.44	0.35	0.48	0.47	0.48	0.52	0.46	0.45	**0.80**	0.81	0.59	0.47	0.48	0.43	0.48	0.46
q8.2.1	0.46	0.33	0.46	0.45	0.47	0.50	0.44	0.44	0.70	**0.93**	0.62	0.46	0.50	0.45	0.46	0.48
q8.2.2	0.45	0.33	0.46	0.45	0.47	0.52	0.45	0.42	0.70	**0.93**	0.62	0.47	0.50	0.45	0.48	0.49
q8.2.3	0.46	0.34	0.49	0.49	0.51	0.55	0.50	0.45	0.70	**0.91**	0.61	0.50	0.54	0.50	0.52	0.51
q8.2.4	0.39	0.28	0.41	0.40	0.44	0.46	0.41	0.37	0.65	**0.87**	0.66	0.48	0.48	0.44	0.45	0.48
q8.3.1	0.24	0.19	0.25	0.24	0.24	0.27	0.31	0.25	0.45	0.56	**0.89**	0.28	0.27	0.29	0.29	0.29
q8.3.2	0.30	0.23	0.33	0.30	0.30	0.33	0.34	0.31	0.46	0.51	**0.83**	0.34	0.36	0.37	0.36	0.32
q8.3.3	0.29	0.31	0.34	0.30	0.34	0.38	0.35	0.34	0.52	0.68	**0.81**	0.39	0.36	0.30	0.33	0.36
q9.1.1	0.65	0.49	0.65	0.69	0.69	0.65	0.65	0.60	0.45	0.43	0.31	**0.87**	0.74	0.74	0.76	0.68
q9.1.2	0.62	0.49	0.65	0.69	0.66	0.68	0.65	0.63	0.48	0.47	0.35	**0.91**	0.77	0.76	0.78	0.76
q9.1.3	0.56	0.50	0.59	0.65	0.62	0.65	0.64	0.62	0.45	0.49	0.40	**0.87**	0.74	0.71	0.72	0.77
q9.2.1	0.70	0.53	0.73	0.74	0.73	0.72	0.69	0.67	0.49	0.50	0.36	0.80	**0.90**	0.81	0.79	0.76
q9.2.2	0.67	0.51	0.71	0.75	0.72	0.71	0.71	0.66	0.49	0.50	0.34	0.75	**0.90**	0.82	0.80	0.74
q9.2.3	0.68	0.53	0.69	0.75	0.71	0.73	0.69	0.67	0.50	0.49	0.36	0.74	**0.91**	0.82	0.78	0.73
q9.2.4	0.66	0.57	0.73	0.75	0.73	0.75	0.68	0.67	0.52	0.52	0.37	0.80	**0.92**	0.84	0.82	0.83
q9.3.1	0.66	0.58	0.72	0.78	0.72	0.74	0.72	0.67	0.51	0.49	0.36	0.82	0.87	**0.94**	0.86	0.80
q9.3.2	0.67	0.58	0.72	0.78	0.73	0.72	0.71	0.63	0.51	0.46	0.35	0.78	0.85	**0.94**	0.86	0.79
q9.3.3	0.70	0.56	0.73	0.78	0.74	0.73	0.70	0.65	0.49	0.46	0.36	0.78	0.84	**0.93**	0.86	0.80
q9.3.4	0.70	0.56	0.73	0.78	0.76	0.75	0.71	0.67	0.48	0.49	0.36	0.76	0.85	**0.93**	0.87	0.79
q9.4.1	0.67	0.55	0.68	0.75	0.71	0.71	0.70	0.67	0.49	0.47	0.31	0.82	0.84	0.87	**0.93**	0.82
q9.4.2	0.66	0.57	0.72	0.76	0.73	0.73	0.71	0.66	0.50	0.51	0.40	0.81	0.84	0.87	**0.94**	0.83
q9.4.3	0.67	0.55	0.69	0.72	0.68	0.69	0.68	0.63	0.50	0.47	0.34	0.76	0.79	0.84	**0.92**	0.79
q9.4.4	0.66	0.53	0.70	0.74	0.73	0.71	0.70	0.64	0.53	0.48	0.36	0.77	0.79	0.81	**0.90**	0.80
q9.5.1	0.67	0.52	0.69	0.75	0.74	0.72	0.68	0.65	0.51	0.50	0.36	0.78	0.81	0.83	0.86	**0.89**
q9.5.2	0.58	0.49	0.62	0.68	0.66	0.67	0.63	0.64	0.49	0.49	0.35	0.78	0.77	0.76	0.79	**0.94**
q9.5.3	0.58	0.50	0.61	0.66	0.63	0.64	0.63	0.60	0.49	0.49	0.32	0.74	0.75	0.75	0.79	**0.93**
q9.5.4	0.61	0.54	0.64	0.70	0.65	0.67	0.70	0.64	0.52	0.50	0.38	0.79	0.79	0.78	0.80	**0.94**

5.4.3.4 Convergent Validity

Ramayah, Lee and In (2011) described Convergent validity as the amount of items measuring the same concept in match and agreement. Sarstedt et al. (2014) suggested that researchers utilize the following tests: factor loadings, composite reliability (CR) and average variance extracted (AVE) for assessing convergence validity. In this study, all the CR values ranged from 0.78 to 0.96, as shown in table 5.6, which indicates good internal CR. Average Variance Extracted (AVE) measures the variance encapsulated by indicators relative to measurement error and it should be at least 0.50 in order to justify the construct use (Sarstedt et al., 2014). In this study, the AVEs ranged from 0.55 to 0.88, which were all within the suggested range as stated in table 5.4. Therefore, all the latent variables satisfied the threshold value and are considered to meet the standard recommended for the validity of convergence. Hence, these values reflect a good convergent validity which means that both desired and achieved goal match in all suggested aspects of loadings, CR and AVE

Table 5. 4
Convergent Validity

VARIABLE	ITEM	LOADING	AVE	CR
CC	q6_1_1	0.8632	0.6939	0.8716
	q6_1_2	0.7815		
	q6_1_3	0.852		
FC	q6_2_1	0.8139	0.5547	0.7881
	q6_2_2	0.6725		
	q6_2_3	0.6964		
	q6_2_4	0.7187		
EE	q6_3_1	0.9228	0.8022	0.9419
	q6_3_2	0.9115		
	q6_3_3	0.8976		
	q6_3_4	0.8491		
PE	q6_4_1	0.8948	0.7891	0.9182
	q6_4_2	0.8816		
	q6_4_3	0.8885		
PEU	q7_1_1	0.9428	0.8684	0.9519

VARIABLE	ITEM	LOADING	AVE	CR
PU	q7_1_2	0.9348	0.8085	0.9266
	q7_1_3	0.9178		
	q7_2_1	0.9339		
	q7_2_2	0.935		
PR	q7_3_1	0.9036	0.7898	0.8825
	q7_3_2	0.8735		
TIT	q7_4_1	0.8241	0.7825	0.9152
	q7_4_2	0.8663		
	q7_4_3	0.9099		
	q7_4_4	0.877		
IMG	q8_1_1	0.824	0.6633	0.8874
	q8_1_2	0.8168		
	q8_1_3	0.8122		
	q8_1_4	0.8048		
SI	q8_2_1	0.9262	0.8249	0.9496
	q8_2_2	0.9294		
	q8_2_3	0.9087		
	q8_2_4	0.8673		
PBC	q8_3_1	0.8931	0.7173	0.8837
	q8_3_2	0.8333		
	q8_3_3	0.8123		
GASS	q9_1_1	0.8656	0.7775	0.9129
	q9_1_2	0.9122		
	q9_1_3	0.8667		
GTAN	q9_2_1	0.9025	0.8225	0.9488
	q9_2_2	0.9026		
	q9_2_3	0.9066		
	q9_2_4	0.916		
GREL	q9_3_1	0.9433	0.8786	0.9666
	q9_3_2	0.9446		
	q9_3_3	0.9339		
	q9_3_4	0.9275		
GRES	q9_4_1	0.9345	0.8512	0.9581
	q9_4_2	0.9406		
	q9_4_3	0.9191		
	q9_4_4	0.8957		
GEMP	q9_5_1	0.8945	0.8524	0.9585
	q9_5_2	0.9361		
	q9_5_3	0.9266		
	q9_5_4	0.9353		

5.4.3.5 Discriminant Validity

The degree of differentiation among constructs or measure of distinct concepts is known as the Discriminant validity. Hair et al. (2014a) stated that the AVE value should be the highest among the other latent construct squared correlation as recommended by Fornell–Larcker (1981) and criterion and the item's loadings must be greater than all the cross loadings.

In this study, first round analysis of discriminant validity detected a loading for the variable coded as Q7_3_3 that not meeting this recommendation and it found that it had cross meaning with the other questions of Q7. Hence, the questionnaire item was removed. Accordingly, both the correlation matrix and AVE for each and every variable was complied with Fornell and Larcker's (1981) criterion as depicted in table 5.5 and this consequently confirmed discriminant validity.

5.4.3.6 Reliability Test

In order to check the selected scales status in terms of relatively reliability in this research, calculating the variable factor Cronbach's Alpha is essential in order to obtain individual internal consistency. The instrument reliability implies that the checking measure will produce the same results if used repetitively. Table 5.6 shows that Cronbach's Alpha is illustrating reliable data and it is greater than 0.5

Table 5. 5
Discriminant Validity Test

	AVE	CC	EE	EGOV	FC	GASS	GEMP	GOE	GREL	GRES	GTAN	IMG	MBIU	MTIU	PBC	PE	PEU	PR	PU	SI	TIT
CC	0.69	**0.83**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EE	0.80	0.81	**0.90**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EGOV	0.58	0.89	0.96	**FORM**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FC	0.55	0.57	0.66	0.75	**0.74**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GASS	0.78	0.69	0.71	0.77	0.57	**0.88**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GEMP	0.85	0.66	0.69	0.75	0.57	0.84	**0.92**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GOE	0.75	0.75	0.79	0.85	0.63	0.92	0.93	**FORM**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GREL	0.88	0.73	0.77	0.83	0.63	0.84	0.85	0.96	**0.94**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRES	0.85	0.72	0.76	0.81	0.61	0.86	0.88	0.96	0.92	**0.92**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GTAN	0.82	0.74	0.79	0.84	0.60	0.85	0.85	0.95	0.91	0.88	**0.91**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IMG	0.66	0.50	0.54	0.56	0.40	0.52	0.54	0.57	0.53	0.55	0.55	**0.81**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MBIU	0.58	0.51	0.54	0.55	0.37	0.55	0.56	0.59	0.54	0.56	0.58	0.89	**FORM**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MTIU	0.67	0.77	0.84	0.89	0.65	0.81	0.79	0.87	0.84	0.83	0.86	0.60	0.61	**FORM**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PBC	0.72	0.33	0.36	0.36	0.26	0.40	0.38	0.41	0.38	0.38	0.39	0.57	0.81	0.41	**0.85**	0.00	0.00	0.00	0.00	0.00	0.00
PE	0.79	0.77	0.88	0.94	0.64	0.77	0.76	0.84	0.83	0.80	0.82	0.55	0.53	0.88	0.33	**0.89**	0.00	0.00	0.00	0.00	0.00
PEU	0.87	0.75	0.83	0.86	0.58	0.74	0.72	0.81	0.79	0.78	0.80	0.53	0.54	0.92	0.35	0.84	**0.93**	0.00	0.00	0.00	0.00
PR	0.79	0.66	0.73	0.77	0.59	0.74	0.72	0.79	0.76	0.76	0.76	0.54	0.54	0.88	0.40	0.76	0.73	**0.89**	0.00	0.00	0.00
PU	0.81	0.72	0.80	0.83	0.59	0.75	0.73	0.81	0.78	0.77	0.80	0.59	0.59	0.93	0.39	0.83	0.85	0.78	**0.90**	0.00	0.00
SI	0.82	0.48	0.50	0.52	0.33	0.53	0.54	0.56	0.51	0.52	0.55	0.76	0.95	0.57	0.69	0.49	0.52	0.50	0.56	**0.91**	0.00
TIT	0.78	0.64	0.67	0.73	0.58	0.70	0.69	0.75	0.70	0.70	0.74	0.52	0.51	0.87	0.36	0.73	0.69	0.76	0.72	0.46	**0.88**

Table 5. 6
Reliability Test

VAR		Cronbach's Alpha	Composite Reliability	N of Items
IEGOV	ICC	.738	0.8716	3
	IFC	.609	0.7881	4
	IEE	.902	0.9419	4
	IPE	.839	0.9182	3
M1TIU	M1PEU	.905	0.9519	3
	M1PU	.910	0.9266	2
	M1PR	.730	0.8825	2
	M1TiT	.844	0.9152	4
M2BIU	M2I	.824	0.8874	4
	M2SI	.903	0.9496	4
	M2PBC	.784	0.8837	3
GOE	GASS	.818	0.9129	3
	GTAN	.914	0.9488	4
	GREL	.941	0.9666	4
	GRES	.928	0.9581	4
	GEMP	.928	0.9585	4

5.4.4 Assessment of Higher Order Measurement Model

This study has three main constructs to be conceptualized as second-order construct namely e-Government (EGOV), Technology Intention to Use (M1TIU) and Behavioral Intention to Use (M2BIU) all of what reach Government Operation Excellence (GOE).

While modelling such higher-order constructs with PLS-SEM for all the mentioned measurement models, they will be estimated separately using an approach called the repeated indicators approach or the hierarchical components model suggested by Wold (Hair et al., 2014). The second-order factor in this approach is measured by all the first-order factors and indicators repeated measures in the analysis (Sarstedt et al., 2014). Figure 5.4 shows the hierarchical components model

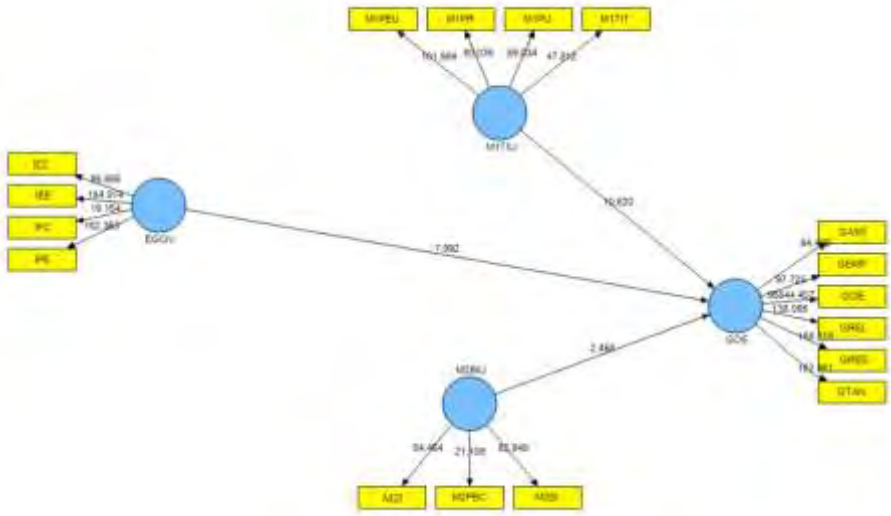

Figure 5. 4
2nd Order framework

Second order constructs were inspected significantly via 5,000 bootstrapped iterations and the assessment results are presented in table 5.9.

Table 5. 7
2nd Order assesment results

	VAR	OW	OL	measurement	reandersatndarised
GOE	GASS	0.1701	0.9113	0.1642	1.3847
	GEMP	0.1656	0.9175	0.161	1.3572
	GOE	0.1872	1	0.1872	1.5781
	GREL	0.1789	0.9377	0.1576	1.3286
	GRES	0.1761	0.9498	0.1658	1.3977
	GTAN	0.1813	0.9424	0.1643	1.3855
EGOV	ICC	0.297	0.8858	0.251	1.2822
	IEE	0.3122	0.9392	0.2685	1.3718
	IFC	0.2036	0.6546	0.2191	1.1192
	IPE	0.3335	0.931	0.2614	1.3356
M1TIU	M1PEU	0.2934	0.9071	0.2492	1.2506
	M1PR	0.281	0.899	0.2526	1.2675
	M1PU	0.2849	0.9004	0.2334	1.171
	M1TIT	0.2681	0.8381	0.2648	1.3288
M2BIU	M2I	0.4423	0.8748	0.3475	1.4708
	M2PBC	0.3016	0.7929	0.3096	1.3104
	M2SI	0.4107	0.9104	0.3429	1.4511

After that the PLS-SEM was used to obtain a path weighting scheme algorithm. This would give estimates of the structural model relationship through obtaining path coefficients which represented the hypothesized relationship among different constructs. The different obtained results of structural model R^2 are obtained and presented below.

5.4.4.1 Analysis of R Square (R^2)

R^2 measures are considered the primary criteria to be evaluated in the structural model by PLS-SEM for determining the path coefficients significant level (Hair et al., 2014a). They aim to explain the endogenous latent variables' variance and usually their R^2 should be reasonable high. Hair et al., (2014a) stated that R^2 values of 0.75, 0.50, or 0.25 for can be counted as substantial, moderate or weak, respectively. Accordingly and based on the results reported in figure 5.5, it can be observed that R^2 of GOE was 0.772 where 77.2% is considered as substantial.

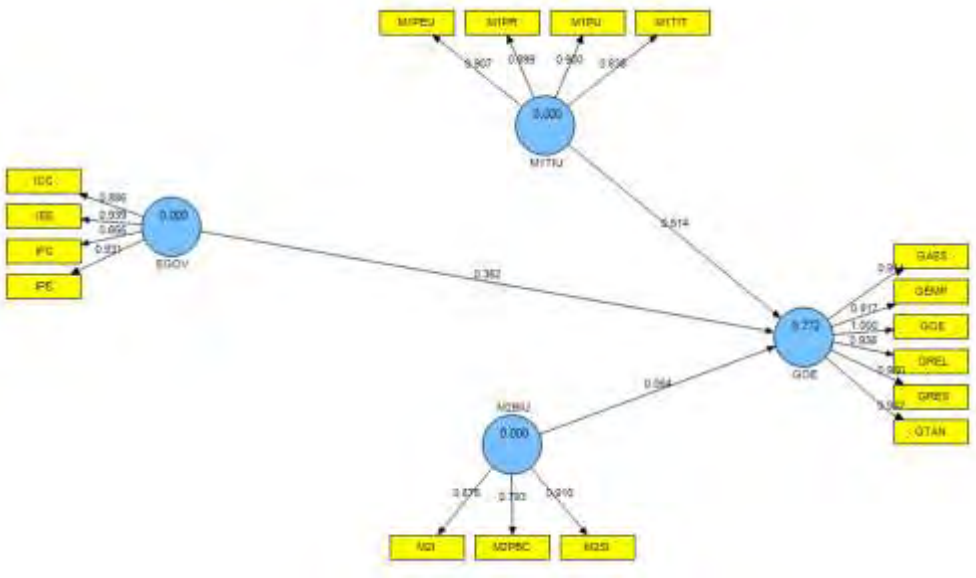

Figure 5. 5
2nd Order framework with R square

5.4.4.2 Blindfolding and Predictive Relevance (Q2) Analysis

Blindfolding procedure is to generate the cross-validated redundancy and cross-validated communality and it is highly recommended as it is basically to evaluate the wellness of the model prediction of the data of omitted cases (Hair et al., 2014a). According to van der Marel (2012), Stone-Geisser's test should be calculated by the following formula: Q^2=1-SSE/SSO. Hair et al. (2014a) suggested that the number of cases should not be a multiple omission distance (*D)* integer number otherwise the blindfolding procedure yields erroneous results and they suggested choosing and selecting a value of *D* between 5 and 10. Thus, in this study 9 is taken as a value for *D* in order to obtain cross-validated redundancy measures for each dependent variable. Cross-redundancy value should be greater than zero; otherwise the model predictive relevance cannot be concluded. Table 5.10 shows the obtained cross validated redundancy values for GOE, M1TIU, M2BIU and EGOV. These results support the researcher's claim that the model has adequate construct prediction relevance.

Table 5. 8
model Prediction relevance

Total	SSO	SSE	1-SSE/SSO
GOE	0.682	0.836	0.24
M1TIU	0.786	0.786	0.27
M2BIU	0.741	0.741	0.35
EGOV	0.741	0.741	0.35

5.5 Testing of Hypotheses

Hair et al. (2011) confirmed that when paths are non-significant or reveal signs that are against the hypothesized direction, the prior hypothesis should be rejected. On the other hand, significant paths showing the hypothesized direction empirically support the

proposed causal relationship. The critical t-values for a two-tailed test are considered to be 1.96 for 5% significance level and 2.58 for 1% significance level. Along this vein, this study used 5,000 re-sampling with a replacement number and number of sample (500) for producing standard errors and obtaining t-statistics. Analysis of each hypothesis is represented in the following subheading.

H1: There is a significant relationship between e-Government system and Government Operation Excellence.

SmartPLS output showed that this hypothesis is valid and accepted. The result indicates that the path coefficient from EGOV to GOE was statistically significant with a very strong standardized estimate and a high t-value of more than 2.58. The out values are illustrated in Table 5.11 and t-value for the hypothesis testing is in figure 5.6.

Table 5. 9
H1 output

	β	Mean	SD	SE	T-Value
EGOV -> GOE	0.8342	0.8344	0.014	0.014	59.6463

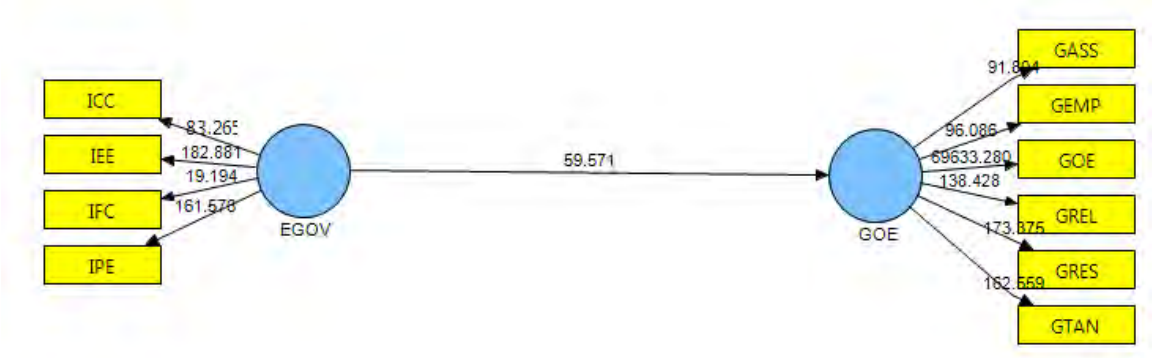

Figure 5. 6
H1 output

H2: There is a significant relationship between different e-Government factors and e-Government.

SmartPLS output showed that this hypothesis is valid and accepted. The result indicates that the path coefficient from different EGOV factors (ICC, IFC, IEE and IPE) towards EGOV was statistically significant with a very strong standardized estimate and high t-value of more than 2.58. The out values are illustrated in Table 5.10 and t-value for the hypothesis testing is in figure 5.7

Table 5. 10
H2 Output

	β	Mean	SD	SE	T Value
ICC -> EGOV	0.2927	0.2921	0.0165	0.0165	17.7917
IEE -> EGOV	0.2858	0.2849	0.0179	0.0179	16.002
IFC -> EGOV	0.2682	0.2678	0.0172	0.0172	15.5694
IPE -> EGOV	0.2948	0.2939	0.0173	0.0173	17.0687

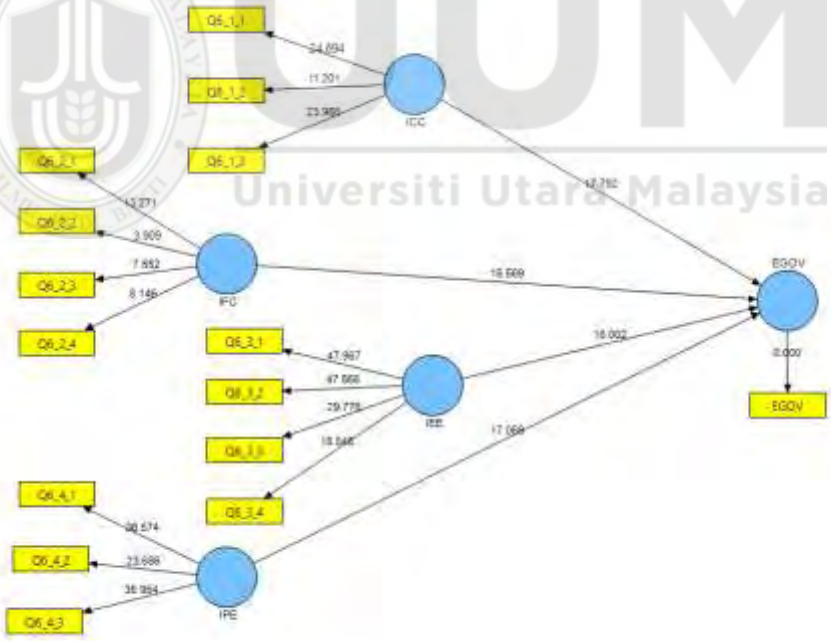

Figure 5. 7
H2 Output

Based on the output extracted from Smart PLS via the bootstrapping method, it can be seen that all the Factors which are used in this study are strongly connected from all corresponding links from all parts. All the links with the associated and chosen questions for each factor of e-Government show more than 2.58 which indicates strong connection and relationship. On the other hand, β shows that almost no priority should be given to any dimension more than the other because there is only a small difference between them.

H3: Technological Intention to Use moderates the relationship between e-Government system and Government Operation Excellence.

Baron and Kenny (1986) indicated that full mediation occurs when IV no longer has a significant effect on DV when the mediator is included in the model, while partial mediation occurs when IV still has a significant effect and its effect is reduced when the mediator is included in the model (Lowry and Gaskin, 2014). On the other hand, Interaction effects that involve moderator variables can be either qualitative or quantitative in nature and can affect the direction or strength of the relationship between an IV and DV (Chin, Marcolin and Newsted, 2003). More precisely, Fontaine et al. (2009) stated that having $p < 0.5$ makes the element count as a partial mediator.

This hypothesis postulates the Technological Intention to Use (TIU) has a moderating effect between the e-Government system (EGOV) and Government Operation Excellence (GOE). Firstly, a direct path between EGOV and GOE was assessed and the results shows path coefficient beta (β) = 0.834 significant at level $p < 2.58$. After the regression and bootstrapping procedure, the size of indirect effect was (β) = 0.which

was statistically significant at t = 5.116 (p < 2.58) after being divided by standard error (S.E.) value = 0.1176. This explains the reduction of the direct effect coefficient to β = 0.375 for a path between M1TIU and GOE but it is still a significant at level p < 2.58. VAF was calculated by using the formula (β / total effect size) = 57%. Moreover, p= 0.2419 is less than 0.5 and this places it in a different category. Thus, it shows that M1TIU was a partial mediator between EGOV and GOE. Thus, H3 is rejected because it show that it is a partial mediating effect. Figure 5.7 and Table 5.12 shows the output for this hypothesis.

Table 5. 11
H3 output

	β	Mean	SD	SE	T-Value
EGOV -> GOE	0.3418	0.3362	0.0686	0.0686	4.9826
EGOV * M1TIU -> GOE	0.0335	0.048	0.1386	0.1386	0.2419
M1TIU -> GOE	0.5296	0.5206	0.0987	0.0987	5.3635

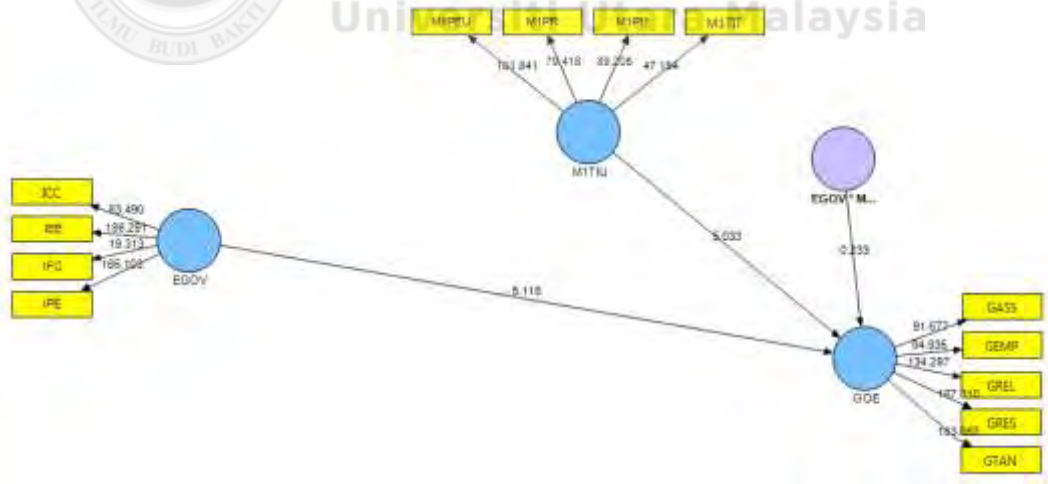

Figure 5. 8
H3 output

H4: Behavioural Intention to Use moderates the relationship between e-Government system and Government Operation Excellence.

This hypothesis postulates the Behavioral Intention to Use (BIU) has a moderating effect between the e-Government system (EGOV) and Government Operation Excellence (GOE). Firstly, the direct path between EGOV and GOE was assessed and result shows a path coefficient beta (β) = 0.834 which is significant at level p < 2.58. After the regression and bootstrapping procedure, the size of indirect effect was (β) = 0.712 which is statistically significant at t = 15.8476 (p < 2.58) after being divided by standard error (S.E.) value = 0.1667. This explains the reduction of direct effect coefficient to β = 0.1101 for the path between M1BIU and GOE but it is still significant at level 0.5 > p < 2.58. VAF was calculated by using the formula (β / total effect size) = 12%. Thus, it showed that M1BIU was not a mediator between EGOV and GOE but it is a moderator. Thus, H4 is accepted and Figure 5.8 and Table 5.13 show the output for this hypothesis.

Table 5. 12
H4 output

	β	Mean	SD	SE	T-Value
EGOV -> GOE	0.7117	0.7098	0.0449	0.0449	15.8476
EGOV * M2BIU -> GOE	0.0752	0.0737	0.0697	0.0697	1.0794
M2BIU -> GOE	0.1101	0.1135	0.0521	0.0521	2.1123

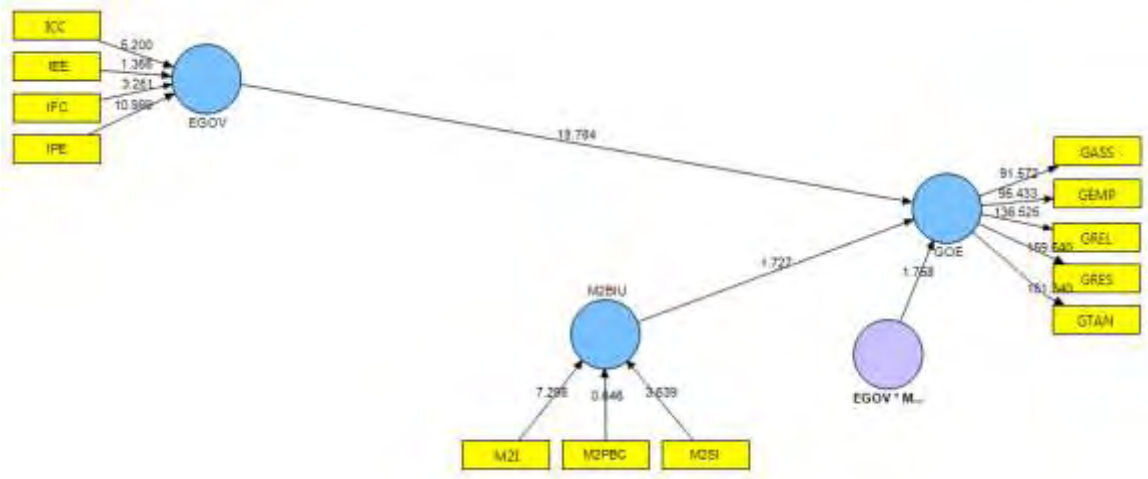

Figure 5. 9
H4 output

Table 5. 13
Hypotheses findings Summary

Hypothesis code	Hypothesis	Decision
H1	There is a significant relationship between e-Government system and Government Operation Excellence.	Accepted
H2	There is a significant relationship between e-Government e-Government factors and e-Government system.	Accepted
H3	Technological Intention to Use moderates the relationship between e-Government system and Government Operation Excellence.	Rejected
H3	Behavioral Intention to Use moderates the relationship between e-Government system and Government Operation Excellence.	Accepted Partial Mediation

5.6 Summary of chapter

The findings of this study were reported in this chapter along with the presentation of the findings on the response rate and characteristics, techniques employed. The measurement refinements and analyses run in order to examine the instrument validity and reliability tests among different variables were explained descriptive statistics showed that generally the respondents' perceptions indicated moderate acceptance levels at the different specified variables indicated in the study. More importantly, this chapter used SPSS and results of PLS analysis in order to analyze obtained results. As mentioned in the various analyses above, four hypotheses were checked and three of

them accepted while one of them was rejected. The summary of all mentioned hypotheses results were shown in table 5.14.

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.1 Introduction

This chapter concludes the research findings derived from the previous analysis and discussion. It presents a summary of the study along with answers to the research questions, key theoretical and practical contributions and their implications. The research limitations and discussion and future research identifications and directions are suggested.

6.2 Recapitulation of study

The main purpose of this study was to develop an integrated model investigating e-government services citizens' acceptance in the Sultanate of Oman that would affect the government operation excellence. The first step in the study was to conduct an extensive literature review for deriving the relevant adoption factors. The research aimed to understand the current e-Government services practices, concept, categories and stages. Since the study is conducted for empirical work in Sultanate of Oman, it was considered essential and important to gain and obtain enough knowledge about the context of the field study especially in a country with distinct cultural characteristics. Then, the study derived the key factors for adoption through reviewing well-known,

accepted scholarly theoretical models in the literature of IT acceptance, Technological and Behavioral intention to use, and related empirical studies.

The study illustrates both technological acceptance and behavioral intention to use that effect citizens in using the e-government system operated by the government of the Sultanate of Oman. This differentiates the study from previous research which considered the technological acceptance only with its effect on government-citizens relationship and its influence in the usage of the proposed system (e.g. Cable, 2013, Alaaraj, 2015, Al-Zu'bi, 2012)

As a result, the decomposed theories of TAM, TTF and SCT were selected by integrating them together to examine e-Government citizens' acceptances and intention to use to affect GOE. To answer the research questions, the study attempted to use and outline an appropriate research methodology by elaborating and conducting research paradigms, strategies and methods. It also presented a valid approach selection justification. Thus, the study generated hypotheses and a research instrument design. A representative sample of five hundred citizens from selected regions in the Sultanate of Oman was collected to validate the structured model along with set hypotheses. The proposed model includes four independent variables: Citizens Centricity, Facilitating Conditions, Effort Expectancy and Performance Expectancy with seven moderation variables divided into two main categories, Technological Intention to Use: Perceived Easy to Use, Perceived Usefulness, Perceived Risk and Trust in Technology. The other

category is the Behavioral Intention to Use: Image, Social Influence and Perceived Behavioral Control.

The model was analyzed and validated using the structural equation modeling (SEM) technique with SPSS and SmartPLS software. The findings showed that both gained measurement and structural models exhibited good model fitting the data. The analysis showed that all obtained constructs satisfied the criteria of construct reliability, convergent and discriminant validity. The paths estimations showed that Technological Intention to Use is more as a mediating construct than a moderating one. By contrast, Behavioral Intention to Use wasfound to be partially mediating construct

6.3 Reflections to the research objectives

The study succeeded in achieving its research objectives. The identified research objectives are addressed as follows:

6.3.1 Investigating the relationship between e-government application system and Government Operation Excellence (GOE)

The results in the literature review in Chapter two along with analyzed data addressed in Chapter five provide a deep overview in terms of theoretical and practical aspects. Moreover, it was found the there is a direct relationship with a strong relation path between e-Government system and GOE. Indeed, e-government will contribute highly in improving the excellence of the government operation and specifically the governmental services provided to the public citizens. This hypothesis is similar to the

output gained from different scholars in all their sub categories like citizen-centricity, facilitating condition and effort expectancy (e.g. Al Zahrani, 2011, Al-Zu'bi, 2012). However, in this research these categories were examined with SERVQUAL of GOE as e-government an influences the GOE.

As per the citizen-centricity, the relation was found to be high because this dimension is essential in e-government to rise trust in the new approach of service provision. The main aim and goal was considered from citizen's point of view and is reflected in their illustration and intentions. This would enhance the probability of success and would affect government operation excellence as per the gained output results

With regard to the facilitating condition, the relation was found to be high since this dimension is fundamental in this kind of project or in any project. Facilitating suitable conditions enhances the project and its success is important.

So far as the effort expectancy is considered, the relation was found to be high and the expected effort from the government towards the new service approach from citizen's point of view is significant. This reflects the trust placed in the expected effect by the government

As per the performance expectancy, it is also found to be high and significant. It reflects the effort in performance as citizens find the government is seeking to give more attention to this project in order to enhance service speed and efficiency.

All of these dimensions are reflected in GOE especially while checking the service quality dimensions illustrated in SERVQUAL and the relation between e-government in general towards implementing a better service approach and more operation excellence found high and essential

6.3.2 To investigate the relationship between e-government application system and Government Operation Excellence (GOE) with the effect of technological intention to use

It was found the there is a mediating direct relationship between e-Government system and GOE that is mediated by TIU. Indeed, nowadays technology use is not a habit or an unnecessary luxury. It is more a style of life and the way that people communicate and interact with each other in their social environment. Hence, a moderating effect is not a sufficient description of technology intention to use; it is has become a mediating effect of the intention. This means that the technology is essential in this project and it has become central to the project

As per the perceived ease of use (PEU), it is found to be essential as citizens want to have a fast and approachable service and they also want the service to be easier and uncomplicated. Citizens have different levels of education and have different interests and this make them search for the easiest and the most appropriate service. Al-Zu'bi (2012) obtained the same result in earlier research.

The perceived usefulness (PU), is also essential. As indicated earlier, citizens always request a fast and approachable service. This is similar to Al Zahrani's (2011) research findings and this means that citizens want to have an efficient and effective service. Hence, if the new service is not as useful as expected and it does not remove the previous gaps or at least it does not improve on the efficiency of the previous approach, why would the government seek to implement it and waste time and money?

The perceived risk (PR), as perceived by citizens, was found to be similar to the approach and research output from Schaupp et al. (2010). That is fluctuates and differentiates between the answers because some respondents issues regarding their personal information and specifically their financial information. This is normal especially in the change management. However, the majority of the responses was found to trust the government to accommodate such information carefully and risk free.

The trust in technology (TiT), was also found to be essential and it has a great effect on the project especially become citizens wish to be more knowledgeable and look for modern approaches in order to make life easier while they interact and share information with the service provider, which is this case is the government. Alaaraj (2015) found similar responces and stated that this trust in technology is combined with the trust in government, which can enhance the probability of having a successful project

All of these dimensions are reflected in GOE especially while checking the service quality dimensions illustrated in SERVQUAL. The relation between e-government and GOE through technology intention to use and towards implementing a better service approach and more operation excellence were found to be high and essential, not just as moderators but more as mediating effects.

6.3.3 To investigate the relationship between e-government application system and Government Operation Excellence (GOE) with the effect of behavioral intention to use

It was found the there is a partial mediating relationship between the e-Government system and GOE through BIU. This indicates that BIU is having more than a moderating effect in the project's implementation and is becoming an essential effect because the public citizens' feelings, relations and the environmental culture in the nation could contribute very highly to their acceptance and intention to use.

With regard to the image (I), it was found that many respondents from the public find that people with higher certificates or with knowledge in modern technology have a better social image. Hence, using modern technology would enhance their image in the society and among their relatives and friends.

In social influence (SI), this dimension was found to be high because people in Oman have a more social and interactive life and this would increase the influence on social life. This influence on citizens from their colleagues, relatives, family and friends is

found to be important in terms of marketing the approach and in faster integrating the usage.

Perceived behavioral control (PBC), was found to increase the self-efficiency of service seekers and enhance the efficiency of the service provider. With better PBC, the service will be smooth because there is more acceptance from citizens to use the provided service approach.

Al Zahrani (2011) and Lu et al. (2011) had all mentioned that the categories Image (I), Social Influence (SI) and Perceived Behavioral Control (PBC) are important, if not essential, in achieving better operation of government. However, they put these categories under Independent Variables (IV) not as moderators or mediators between e-government and GOE as was done in this study.

In this study the main measurement and output was placed with the behavioral intention to use taken as a moderator and this was found to be partially mediating between e-government and GOE.

6.4 Research Contributions

The outcomes of the research contribute to understanding the e-Government adoption drivers from the citizens' perspective and viewpoints. The study conducted a literature review in order to address the gap in the knowledge in the citizen acceptance field of e-Government and also to outline the key adoption elements in the country. Consequently, the study succeeded in terms of developing and validating an integrated

combined model based on well-known theories and accepted scholarship on acceptance and intention to use in terms of both technology and behavior as these factors affected citizens. This generated the following contributions:

1. The core element of the research's contribution is that it provides better e-government services and citizen acceptance and intention to use in the Sultanate of Oman. The research portrays a roadmap for the aspects of acceptance and intention to use by developing an e-government adoption integrated model from the citizens' perspective. The model is analyzed and validated based on empirical work with large size data base. The model involved a Technology Acceptance Model, Technology Task Fit and Social Cognitive Theory. Lastly, it succeeds in figuring and revealing the key factors that affect citizen acceptance of e-Government services in the Sultanate of Oman.

2. This study is different from other earlier studies (Schaupp et al., 2010; Al Zahrani, 2011; Al Zu'bi, 2012; Alaaraj, 2015) in the literature by investigating a broader e-government services set from the citizens' perspective and viewpoint and not focusing on a specific application. Thus, the research integrated technological and behavioral intention to use aspects in the acceptance model.

3. The study shows that technological acceptance is becoming an essential aspect of achieving government operational excellence with a mediating effect which means

that it plays an important role in citizens' acceptance of e-Government services this is in line with Al Zu'bi (2012) conclusions

4. The study shows that behavioral acceptance is becoming an essential aspect of achieving government operational excellence with partial mediating effect and it plays an important role in citizens' acceptances of e-Government services.

5. The validated instrument employed is reliable for conducting future studies in technology and behavior intention to use aspects and citizen's acceptance. It is based on rigorous validation along with previous validated instruments in the IT literature.

6.5 Implications for Theory

The study modifies, integrates and validates a framework based on the TAM, TTF and SCT models for the e-government adoption application from citizens' perspective and viewpoints. The study integrates technological intention to use with behavioral intention to use into the theoretical framework which is the key contribution to the theory's development. The findings demonstrate the adapted theory's robustness and appropriateness to help in understanding online users of e-Government applications behavior in the context of the Sultanate of Oman. The developed model could provide a foundation for future studies in the region. Moreover, the validated research instrument could serve as a base for further studies in IT research, particularly in the Middle East.

6.6 Implications for Practice

The e-government success is contingent upon citizen willingness and intention to use e-government services. The government of the country should give careful consideration to develop IT projects without forgetting to focus on citizens' viewpoints in order to transfer traditional services online successfully. An understanding of the relevant factors of citizen acceptance e-government can provide policy and decision makers with a set of strategic management plans allowing them to build and promote greater acceptance of these services. The research results hold important and essential strategic suggestions for the various government departments and agencies that provide e-government services in increasing the citizens' adoption rate.

In terms of e-Government, the results underscore the importance of citizens' trust in government for adoption. The government should give more effort to building positive government-citizen relationships as citizens are the main customers and accordingly the main factor that will affect the success or failure of the e-Government project. Hence, it is considered essential to have the necessary skills and expertise while conducting the project for smooth achievement of the goal. Furthermore, co-operating with competent well-known businesses in the e-service and e-government area in order to enhance government-citizens relationship and to make the project more citizen-centricity should enhance citizen trust towards government. On the other hand, citizens' effort expectancy and performance expectancy from government affects the e-Government project in general and could decrease trust in government which would effect GOE. Government should establish a better environment and platform for the project in order

to enhance citizens' acceptance toward the project as well as achieving GOE successfully. For instance, the Internet is irrelevant for developers wishing to implement the latest advance tools, equipment and foundations with significant security standards. Government could focus on promoting and educating citizens about the e-services provided by e-government technology. That would promote confidence and overcome the current barriers between individuals and the technology. Clear visions, missions and strategies for developing e-Government in the country could help in facilitating the adoption of e-Government. Such initiatives could encourage citizens' intention to use e-Government as a successful national project.

In terms of technology intention to use, it is essential and important for the government of the country to work on stimulating positive feelings while using e-Government initiatives in order to ensure successfully accepted projects. Operating on the significant attitude antecedents of (e.g. perceived usefulness, perceived ease to use, perceived risk and trust in technology) among citizens, could facilitate the adoption of e-services. This might eventually lead to the development of positive attitudes towards e-services in e-Government, as opposed to the traditional governmental services. Decision makers in governments might launch a marketing campaign focusing on the wide variety of project benefits for its citizens, using various media channels. It is crucial to promote the e-Government services utilization benefits over the traditional ways in order to show their use and ease to use and accordingly to increase citizen's trust in technology. Failures in protecting the system and the personal data of citizens could cause loss of trust and confidence in the system and in the government's ability to carry out such

projects. This would discourage citizens from using the system and effect their perceived risk category.

In terms of behavioral intention to use, the significant impact of behavioral intention to use, like perceived behavioral control (PCB), stresses the essential role of internal and external impediments that can hinder or facilitate e-government technology use. The findings of the study show that Image, Social Influence and Perceived Behavioral Control have significant impacts on intention. It is fundamental that decision makers aim to overcome any potential barriers towards utilizing the provided services successfully and effectively. For instance, if the government wants to boost confidence and familiarity in e-government services usage among citizens, it should advertise demonstrations of how to use these services and this will effect both the citizens' and government's efficiency.

6.7 Research Limitations

This research has developed a framework from well-known and accepted scholarly theories in adoption and has then validated these by covering a large size sample of 500 participants pooled from the citizens of Sultanate of Oman. However, like any other research, this research has some limitations.

The first limitation comes from the sample population collection. Although the research has followed the common sampling in data collection practice the data was only collected from Muscat, Al Batinah, al Dakhliya and Al Sharqiya. This procedure is good especially with very high sample size but in order to generalize the result to the

whole country but it would be more efficient if it had been collected from all regions of the Sultanate.

Another important limitation is reflected in the high number of male compared to female participants. Although, data distribution procedure did not have a demographic filter for gender, it was noticed that the number of participants from male is very large compared to the female participants

Another limitation is the data distribution procedure. Although the research is talking about IT and technology aspects and used one of the most famous procedures in data distribution, which is online procedure through links in phones, this procedure has a limitation. Participants need to obtain smart phones, smart devices or at least personal computers or laptops in order to participate in the data collection. Citizens who do not have knowledge of computers and modern smart devices or who do not have the required tools and equipment for participating in the collection are not included.

Finally, although the study follows the common languages in the country (Arabic and English) it is important to note that there could be a possibility of a slight skew of the original required and aimed meaning during the translation process.

6.8 Directions for Future Research

The study presented a model drawn from well-known theories of technology acceptance and was validated using data collected from citizens of the Sultanate of Oman for the adoption of e-Government services by utilizing structural equation

modeling (SEM). Despite the statistical outcomes that provided significant results in both the measurement and structural stages of models analysis, there is a possibility of including other new or available factors in the model in order to increase understanding in this field. For instance, cultural factors, religious factors and gender factors. These factors may influence public citizens more in their behavior and intention to use. On the other hand, giving higher consideration to such influencing factors may enhance and contribute to increasing the information and knowledge. Another direction for future study is to research the relation and interaction between e-government and other knowledge approaches in the nation like enhancing other sectors in the Sultanate of Oman, like tourism to e-tourism, in order to improve their contribution to the nation's economy.

It might be appropriate to recommend further research data collection by including non-Internet users in order to examine any difference in the result. For enhancing the generalizability results, additional future studies are encouraged in technology acceptance, technological intention to use and behavioral intention to use in the Middle East and, in particular, in the GCC countries.

Finally, the current research is a positivist quantitative based approach. Perhaps an interpretation of additional qualitative approach would increase the understanding and shed some light from decision makers on the unexpected results.

6.9 Summary of chapter

This chapter presents a restatement and overview of the study that is a detailed analysis of the relationship between the e-Government system and Government Operation Excellence in the Sultanate of Oman. Emphasis is placed on the intermediate influence of Behavioral Intention to Use (BIU) and Technology Intention to Use (TIU) assessment in the Sultanate of Oman. This includes a detailed analysis of the outcomes reflected with the desired and targeted objectives and how every dimension contributes to each objective. Moreover, the complete study contribution was mentioned with its implications in both theory and practice was illustrated in this chapter. In theoretical implication, the study modifies, integrates and validates a framework based on the TAM, TTF and SCT models for the adoption of the e-government applications from citizens' perspectives and viewpoints. In the practical implication, the study give a roadmap to the Sultanate of Oman in conducting and improving the e-government of the Sultanate.

Illustrating the limitation of the study was a part of the chapter and there were some limitations in the study, like in any other study. The data collecting procedure, the discrepancy in gender participants and the availability of equipment and tools availability when responding to the survey were the main limitations presented in the chapter.

Finally, the chapter made some comments and offered guidelines for future research in the field of e-government by investigating more dimensions in the field or by

investigating the relationship between this field and the other fields. That might enhance and improve the contribution of e-government and the economy of the nation

REFERENCES

Aasi, J., Abbott, B.P., Abbott, R., Abbott, T., Abernathy, M.R., Ackley, K., Adams, C., Adams, T., Addesso, P., Adhikari, R.X. and Adya, V., 2015. Advanced ligo. Classical and Quantum Gravity, 32(7), p.074001.

Abanumy, A.N., Mayhew, P. and Al-Badi, A.H., 2003, December. An Exploratory Study of E-government in two GCC Countries. In The 2003 International Business Information Management Conference, Cairo, Egypt (pp. 16-18).

Abanumy, A., Al-Badi, A. and Mayhew, P., 2005. e-Government Website accessibility: in-depth evaluation of Saudi Arabia and Oman. The Electronic Journal of e-Government, 3(3), pp.99-106.

Abdalla, S., 2012. An e-government adoption framework for developing countries: A case study from Sudan.

Abdulwahab, L. and Dahalin, Z.M., 2010. A conceptual model of Unified Theory of Acceptance and Use of Technology (UTAUT) modification with management effectiveness and program effectiveness in context of telecentre. African Scientist, 11(4), pp.267-275.

Abri, D.A., McGill, T. and Dixon, M., 2009. Examining the Impact of e-Privacy Risk Concerns on Citizens' Intentions to Use e-Government Services: An Oman Perspective. Journal of Information Privacy and Security, 5(2), pp.3-26.

ACCELA, Inc., 2002, government-to-business (g2b) web services for online permitting: vertical applications that drive long-term GDP growth. White paper presented at the meeting of ACCELA, Inc., san Ramon, ca. retrieved February 18, 2015 from http://www.accela.com/goods/includes/assets/g2b_whitepaper_04.pdf

Accenture, 2004, e-government leadership: high performance, maximum value, government executive series, pp. 3-99

Ajzen, I., 1991. The theory of planned behavior. Organizational Behavior and Human Processes, 50, 179-211.

Akkoyunlu, B. and Yilmaz-Soylu, M., 2008. A Study of Student's Perceptions in a Blended Learning Environment Based on Different Learning Styles. Educational Technology & Society, 11(1), pp.183-193.

Akman, I., Yazici, A., Mishra, A. and Arifoglu, A., 2005. E-Government: A global view and an empirical evaluation of some attributes of citizens. Government Information Quarterly, 22(2), pp.239-257.

Alaaraj, H, 2015, the mediating effect of employee's trust on e-government and good governance in the public sector of developing countries, [e-thesis], UUM, Malaysia

Alaaraj, H. and Ibrahim, D.F.W., 2014. The mediating effect of employee's trust on e-government and good governance in the public sector of developing countries. International Journal of Learning and Development, 4(3), pp.92-103.

Alaaraj, H. and Hassan, S., 2014. Developing SWOT/TOWS Strategic Matrix for Egovernment in Lebanon. IJMRD, UUM, Malaysia.

Al-Adawi, Z., Yousafzai, S. and Pallister, J., 2005, September. Conceptual model of citizen adoption of e-government. In The Second International Conference on Innovations in Information Technology (IIT'05) (pp. 1-10).

Alanezi, M.A., Kamil, A. and Basri, S., 2010. A proposed instrument dimensions for measuring e-government service quality. International Journal of u-and e-Service, 3(4), pp.1-18.

Alavi, M. and MAJIDI, A., 2015. Identifying and Prioritizing Effective Factors on Assessing Service Quality of E-Government. Cumhuriyet Science Journal, 36(3), pp.2526-2534.

AlAwadhi, S. and Morris, A., 2009. Factors influencing the adoption of e-government services. Journal of Software, 4(6), pp.584-590.

Al-Azri, A., Al-Salti, Z. and Al-Karaghouli, W., 2010. The successful implementation of e-government transformation: a case study in Oman.

Al-Busaidy, M.M., 2011. Evaluating the institutional factors affecting e-government implementation (Doctoral dissertation, Brunel University, School of Information Systems, Computing and Mathematics).

Al-Busaidy, M. and Weerakkody, V., 2010. The e-government implementation directions in Oman: A preliminay investigation.

Al-Busaidy, M. and Weerakkody, V., 2009. E-government diffusion in Oman: a public sector employees' perspective. Transforming Government: People, Process and Policy, 3(4), pp.375-393.

Al-Busaidy, M. and El-Haddadeh, R., 2011. Evaluating e-governemnt implementation using an institutioal perspective: a case study of oman. In ECIS.

Al Esmaeli, S, 2002, Oman e-government strategy, in: higher leadership symposium on e-government: innovation and challenges to the 21st century managers, Muscat, Oman.

Alegre, J., Sengupta, K. and Lapiedra, R., 2013. Knowledge management and innovation performance in a high-tech SMEs industry. International Small Business Journal, 31(4), pp.454-470.

Al-Gahtani, S.S., 2008. Testing for the applicability of the TAM model in the Arabic context: exploring an extended TAM with three moderating factors. Information Resources Management Journal, 21(4), p.1.

Alghamdi, I.A., Goodwin, R. and Rampersad, G., 2011. E-government readiness assessment for government organizations in developing countries. Computer and Information Science, 4(3), p.3.

Al-Gharbi, K. and Al-Kindi, A., 2010. E-Government Initiative in the Sultanate of Oman: The Case of Ubar. International Journal of Technology Diffusion (IJTD), 1(1), pp.70-74.

Al-Hadidi, A. and Rezgui, Y., 2014, October. Adoption and diffusion of m-government: Challenges and future directions for research. In Working Conference on Virtual Enterprises (pp. 88-94). Springer Berlin Heidelberg.

Al-Hadidi, A. and Rezgui, Y., 2010, October. Adoption and diffusion of m-government: Challenges and future directions for research. In Working Conference on Virtual Enterprises (pp. 88-94). Springer Berlin Heidelberg.

Aljukhadar, M., Senecal, S. and Nantel, J., 2014. Is more always better? Investigating the task-technology fit theory in an online user context. Information & Management, 51(4), pp.391-397.

Al-Kibsi, G., De Boer, K., Rea, N.P. and Mourshed, M., 2001. Putting citizens on-line, not in line. The McKinsey Quarterly, pp.65-65.

Alkeshar, F.M.A., 2008. The Acceptance Level Of Electronic Government Initiatives At The Tripoli Immigration Department Of Libya (Doctoral dissertation, Universiti Utara Malaysia).

Al-Khouri, A.M. and Bachlaghem, M., 2011. Towards federated e-identity management across GCC–A solution's framework. Global Journal of Strategies & Governance, 4(1), pp.30-49.

Al-Khouri, A.M. and Bal, J., 2007. Electronic government in the GCC countries. International Journal of Social Sciences, 1(2), pp.83-98.

Al-Khouri, A.M., 2012a. Emerging markets and digital economy: Building trust in the virtual world. International Journal of Innovation in the Digital Economy (IJIDE), 3(2), pp.57-69.

Al-Khouri, A.M., 2012b. PKI in government digital identity management systems. European Journal of ePractice, 4, pp.4-21.

Al Musawi, A.S., 2012. Chapter-22 e-Learning in Oman.

Allen, G., 2007. Teaching social behavior in schools-what can governments do?. Health Education, 107(1), pp.5-9.

Almutairi, H. and Subramanian, G.H., 2005. An empirical application of the DeLone and McLean model in the Kuwaiti private sector. Journal of Computer Information Systems, 45(3), pp.113-122.

Al-Rahbi, T., 2011. Digital Oman Strategy and e-Government (e-Oman). Sultanate of Oman, ITA.

Al-Rahbi, Y., Al-Harrasi, S. and Al-Wahaibi, S., 2012. Technical factors affecting the adoption of e-government. Sultanate of Oman, ITA.

Alsaghier, H., Ford, M., Nguyen, A. and Hexel, R., 2011. Conceptualising citizen's trust in e-government: Application of Q methodology. Leading Issues in E-Government, 1, p.204.

Al-Shafi, S.H., 2009. Factors affecting e-Government implementation and adoption in the State of Qatar (Doctoral dissertation, Brunel University, School of Information Systems, Computing and Mathematics).

Alshawi, S. and Alalwany, H., 2009. E-government evaluation: Citizen's perspective in developing countries. Information Technology for Development, 15(3), pp.193-208.

Alshehri, M., Drew, S. and AlGhamdi, R., 2013. Analysis of Citizens Acceptance for E-government Services: Applying the UTAUT Model. arXiv preprint arXiv:1304.3157.

Alshehri, M., Drew, S., Alhussain, T. and Alghamdi, R., 2012. The Effects of Website Quality on Adoption of E-Government Service: AnEmpirical Study Applying UTAUT Model Using SEM. arXiv preprint arXiv:1211.2410.

AlShihi, H., 2006. Critical Factors in the Adoption and Diffusion of E-government Initiatives in Oman (Doctoral dissertation, Victoria University).

Al Shihi, H, 2005, barriers to the uptake of, paper presented at 1st VUT business research conference, Melbourne, Australia, retrieved February 18, 2015 from http://wallaby.vu.edu.au/adt-vvut/uploads/approved/adt-vvut20060904.154748/public/01front.pdf

Al Siyabi, K. and Al Habib, A., 2014. Measuring Government's Performance (Services) Oman Service Maturity Model (OSMM). World Academy of Science, Engineering and Technology, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering, 8(7), pp.2295-2298.

Alzahrani, M.E. and Goodwin, R.D., 2012. Towards a UTAUT-based model for the study of E-Government citizen acceptance in Saudi Arabia. In Proceedings of World Academy of Science, Engineering and Technology (No. 64). World Academy of Science, Engineering and Technology.

Alzahrani, A.I., 2011. Web-based e-Government services acceptance for G2C: A structural equation modelling approach.

Al-Zu'bi, M.I.S., 2012. Electronic government adoption model among business organizations in Jordan (Doctoral dissertation, Universiti Utara Malaysia).

Ambrose, P. and Johnson, G., 1998. A trust based model of buying behavior in electronic retailing. AMCIS 1998 Proceedings, p.91.

American educational research association, American psychological association, & national council on measurement in education. (1999) standards for educational and psychological testing. Washington, dc: American educational research association.

Amit, R. and Zott, C., 2001. Value creation in e-business. Strategic management journal, 22(6-7), pp.493-520.

Anderson, J, 2006, public strategy making: an introduction (6th ed.), Boston, ma: Houghton Mifflin company

Armstrong, M. and Taylor, S., 2014. Armstrong's handbook of human resource management practice. Kogan Page Publishers.

Ashcroft, B., Griffiths, G. and Tiffin, H., 1998. Key concepts in post-colonial studies. Psychology Press.

Ashrafi, R. and Murtaza, M., 2008. Use and Impact of ICT on SMEs in Oman. Electronic Journal Information Systems Evaluation, 11(3), pp.125-138.

Asubonteng, P., McCleary, K.J. and Swan, J.E., 1996. SERVQUAL revisited: a critical review of service quality. Journal of Services marketing, 10(6), pp.62-81.

Atkinson, R.D. and Castro, D., 2008. Digital quality of life: Understanding the personal and social benefits of the information technology revolution. Available at SSRN 1278185.

Awan, M.A., 2003, September. E-government: Assessment of GCC (Gulf Co-operating Council) countries and services provided. In International Conference on Electronic Government (pp. 500-503). Springer Berlin Heidelberg.

Aydinli, Ö.F. and Ravesteijn, P., 2010. Business Process Improvement in a Governmental Shared Service Centre: A New Approach to BPR. In Conference Proceedings of the 2nd International Conference eGovernment and eGovernance.

Ayo, C.K., Mbarika, V.W. and Oni, A.A., 2015. The Influence of Trust and Risk on Intention to Use E-Democracy in Nigeria. Mediterranean Journal of Social Sciences, 6(6 S1), p.477.

Ayyash, M.M., Ahmad, K. and Singh, D.S.V., 2011. A questionnaire approach for user trust adoption in palestinian E-government initiative. American Journal of Applied Sciences, 8(11), pp.1202-1208.

Bagchi, K., Cerveny, R., Hart, P. and Peterson, M., 2003. The influence of national culture in information technology product adoption. AMCIS 2003 Proceedings, p.119.

Bailard, C.S., 2009. Mobile phone diffusion and corruption in Africa. Political Communication, 26(3), pp.333-353.

Bakr, A. and Ebrahim, W.R., 2009. Towards an eGovernment: the case of the Emirate of Dubai (Doctoral dissertation, University of Westminster).

Baker, E.W., Al-Gahtani, S.S. and Hubona, G.S., 2007. The effects of gender and age on new technology implementation in a developing country: Testing the theory of planned behavior (TPB). Information Technology & People, 20(4), pp.352-375.

Bannister, F. and Walsh, N., 2002. The virtual public servant: Ireland's public services broker. Information Polity, 7(2, 3), pp.115-127.

Bargas-Avila, J.A., Orsini, S., de Vito, M. and Opwis, K., 2010. ZeGo: development and validation of a short questionnaire to measure user satisfaction with e-government portals. Advances in Human-Computer Interaction, 2010, p.6.

Baron, R.M. and Kenny, D.A., 1986. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of personality and social psychology, 51(6), p.1173.

Bart, Y., Shankar, V., Sultan, F. and Urban, G.L., 2005. Are the drivers and role of online trust the same for all web sites and consumers? A large-scale exploratory empirical study. Journal of marketing, 69(4), pp.133-152.

Barua, M., 2012. E-governance adoption in government organization of India. International Journal of Managing Public Sector Information and Communication Technologies, 3(1), p.1.

Basu, S., 2004. E-government and developing countries: an overview. International Review of Law, Computers & Technology, 18(1), pp.109-132.

Bélanger, F. and Carter, L., 2008. Trust and risk in e-government adoption. The Journal of Strategic Information Systems, 17(2), pp.165-176.

Beer, W., 2011. Cybercrime: Protecting against the Growing Threat. Global Economic Crime Survey, retrieved February, 30, p.2012.

Benjamin, S.M., 2006. Evaluating e-rulemaking: Public participation and political institutions. Duke Law Journal, pp.893-941.

Berg, J., Dickhaut, J. and McCabe, K., 1995. Trust, reciprocity, and social history. Games and economic behavior, 10(1), pp.122-142.

Berry, L.L., 1980. Services marketing is different. Business, 30(3), pp.24-29.

Bertot, J.C., Jaeger, P.T. and McClure, C.R., 2008, May. Citizen-centered e-government services: benefits, costs, and research needs. In Proceedings of the 2008 international conference on Digital government research (pp. 137-142). Digital Government Society of North America.

Bertot, J.C., Jaeger, P.T. and Grimes, J.M., 2010. Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. Government information quarterly, 27(3), pp.264-271.

Benbasat, I. and Barki, H., 2007. Quo vadis TAM?. Journal of the association for information systems, 8(4), p.7.

Bezruki, D., Lecoanet, R., Hammer, C. and Sakk, L., 2004. Best Practices: Local Government User Fees. Madison, WI: Wisconsin Legislative Audit Bureau. Retrieved February, 27, p.2007.

Bloom, N., 1988. What do Employee Attitude Surveys Achieve. Industrial Marketing Digest, 13(4), pp.96-104.

Bonina, C.M. and Cordella, A., 2008. The new public management, e-government and the notion of'public value': lessons from Mexico. GlobDev 2008, p.11.

Bonsón, E., Torres, L., Royo, S. and Flores, F., 2012. Local e-government 2.0: Social media and corporate transparency in municipalities. Government information quarterly, 29(2), pp.123-132.

Bose, R., 2004. April. Information technologies for education & training in e-government. In Information Technology: Coding and Computing, 2004. Proceedings. ITCC 2004. International Conference on (Vol. 2, pp. 203-207). IEEE.

Branch, D. and Cheeseman, N., 2009. Democratization, sequencing, and state failure in Africa: Lessons from Kenya. African Affairs, 108(430), pp.1-26.

Breen, J., 2000. At the dawn of e-government: the citizen as customer. Government Finance Review, 16(5), pp.15-20.

Brewer, G.A., Neubauer, B.J. and Geiselhart, K., 2006. Designing and Implementing E-Government Systems Critical Implications for Public Administration and Democracy. Administration & Society, 38(4), pp.472-499.

Brown, J. D. 1996. Testing in language programs. Upper saddle river, NJ: prentice hall regents.

Byrne, B.M., 2013. Structural equation modeling with AMOS: Basic concepts, applications, and programming. Routledge.

Cable, V., 2013. Transparency & trust: enhancing the transparency of UK company ownership and increasing trust in UK business. IDBR, Retrieved November, 10.

Campello, M. and Graham, J., 2007. Do stock prices influence corporate decisions? Evidence from the technology bubble (No. w13640). National Bureau of Economic Research.

Cao, Q. and Dowlatshahi, S., 2005. The impact of alignment between virtual enterprise and information technology on business performance in an agile manufacturing environment. Journal of Operations Management, 23(5), pp.531-550.

Carter, L. and Bélanger, F., 2005. The utilization of e-government services: citizen trust, innovation and acceptance factors. Information systems journal, 15(1), pp.5-25.

Carter, L. and Belanger, F., 2004. The influence of perceived characteristics of innovating on e-government adoption. Electronic Journal of E-government, 2(1), pp.11-20.

Castells, M., 2011. The rise of the network society: The information age: Economy, society, and culture (Vol. 1). John Wiley & Sons.

Cecchini, S. and Raina, M., 2004. Electronic government and the rural poor: The case of Gyandoot. Information Technologies and International Development, 2(2), pp.65-75.

Chadwick, A. and May, C., 2003. Interaction between States and Citizens in the Age of the Internet: "e-Government" in the United States, Britain, and the European Union. Governance, 16(2), pp.271-300.

Chan, F.K., Thong, J.Y., Venkatesh, V., Brown, S.A., Hu, P.J. and Tam, K.Y., 2010. Modeling citizen satisfaction with mandatory adoption of an e-government technology. Journal of the Association for Information Systems, 11(10), pp.519-549.

Chang, L., 1994. A psychometric evaluation of 4-point and 6-point Likert-type scales in relation to reliability and validity. Applied psychological measurement, 18(3), pp.205-215.

Chellappa, R.K. and Pavlou, P.A., 2002. Perceived information security, financial liability and consumer trust in electronic commerce transactions. Logistics Information Management, 15(5/6), pp.358-368.

Chen, Y.C. and Thurmaier, K., 2008. Advancing E-Government: Financing Challenges and Opportunities. Public Administration Review, 68(3), pp.537-548.

Chen, Y.N., Chen, H.M., Huang, W. and Ching, R.K., 2006. E-government strategies in developed and developing countries: An implementation framework and case study. Journal of Global Information Management, 14(1), p.23.

Chen, C.M., Delmas, M.A. and Lieberman, M.B., 2015. Production frontier methodologies and efficiency as a performance measure in strategic management research. Strategic Management Journal, 36(1), pp.19-36.

Cheng-Yi Wu, R., 2007. Enterprise integration in e-government. Transforming Government: People, Process and Policy, 1(1), pp.89-99.

Chin, W.W., Marcolin, B.L. and Newsted, P.R., 2003. A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. Information systems research, 14(2), pp.189-217.

Chircu, A.M., Davis, G.B. and Kauffman, R.J., 2000. The role of trust and expertise in the adoption of electronic commerce intermediaries. Management Information Systems Research Center Working Paper 00-07.

Chuttur, M.Y., 2009. Overview of the technology acceptance model: Origins, developments and future directions. Working Papers on Information Systems, 9(37), pp.9-37.

Conklin, A. and White, G.B., 2006, January. E-government and cyber security: the role of cyber security exercises. In Proceedings of the 39th Annual Hawaii International Conference on System Sciences (HICSS'06) (Vol. 4, pp. 79b-79b). IEEE.

Cooper, D.R., Schindler, P.S. and Sun, J., 2003. Business research methods.

Cooper, R.B. and Zmud, R.W., 1990. Information technology implementation research: a technological diffusion approach. Management science, 36(2), pp.123-139.

Corrocher, N. and Ordanini, A., 2002. Measuring the digital divide: A framework for the analysis of cross-country differences. Journal of Information technology, 17(1), pp.9-19.

Coursey, D. and Norris, D.F., 2008. Models of e-government: Are they correct? An empirical assessment. Public administration review, 68(3), pp.523-536.

Cristobal, E., Flavián, C. and Guinalíu, M., 2007. Perceived e-service quality (PeSQ) Measurement validation and effects on consumer satisfaction and web site loyalty. Managing service quality: An international journal, 17(3), pp.317-340.

Cronbach, L.J. and Meehl, P.E., 1955. Construct validity in psychological tests. Psychological bulletin, 52(4), p.281.

Dada, D., 2006. The failure of e-government in developing countries: A literature review. The Electronic Journal of Information Systems in Developing Countries, 26.

Dahl, R.A., 2006. On political equality. Yale University Press.

Dahl, R.A., 2013. A preface to democratic theory. University of Chicago Press.

Dahlberg, T., Mallat, N., Ondrus, J. and Zmijewska, A., 2008. Past, present and future of mobile payments research: A literature review. Electronic Commerce Research and Applications, 7(2), pp.165-181.

Dantzker, M.L. and Hunter, R.D., 2006. Research methods for criminology and criminal justice: A primer. Jones & Bartlett Learning.

Darnell, J., Cahn, S., Turnock, B., Becker, C., Franzel, J. and Wagner, D.M., 2013. Local health department workforce recruitment and retention: challenges and opportunities. Washington, DC: Center for State and Local Government Excellence.

Davison, R.M., Wagner, C. and Ma, L.C., 2005. From government to e-government: a transition model. Information technology & people, 18(3), pp.280-299.

Davis, F.D., 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS quarterly, pp.319-340.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R., 1989. User acceptance of computer technology: a comparison of two theoretical models. Management science, 35(8), pp.982-1003.

Davison, R.M., Wagner, C. and Ma, L.C., 2005. From government to e-government: a transition model. Information technology & people, 18(3), pp.280-299.

Dawes, S.S., 2002. The future of e-government. Center for Technology in Government, pp.2006-1781.

De Angelis, F., 2009. Interoperability in e-Government Services (Doctoral dissertation, School 0f Advanced Studies-Doctorate course in" Information science and complex systems"(XXI cycle).).

Deloitte Research, 2000. At the Dawn of e-Government: The Citizen as Customer. Deloitte Consulting.

Delone, W.H. and Mclean, E.R., 2004. Measuring e-commerce success: Applying the DeLone & McLean information systems success model. International Journal of Electronic Commerce, 9(1), pp.31-47.

Denler, H., Wolters, C. and Benzon, M., 2014. Social cognitive theory. Retrieved from.

Dillman, D.A., 2000. Mail and web-based survey: The tailored design method. NY: John Wiley & Sons.

DPEPA, U.N., 2001. Benchmarking E-government: A Global Perspective. United Nation Division for Public Economics and Public Administration – American Society for Public Administration: USA.

Donnelly, M., Wisniewski, M., Dalrymple, J.F. and Curry, A.C., 1995. Measuring service quality in local government: the SERVQUAL approach. International Journal of Public Sector Management, 8(7), pp.15-20.

Ebrahim, Z., Irani, Z. and Al Shawi, S., 2003. July. e-Government adoption: Analysis of adoption staged models. In Proceedings of the 3rd European Conference on e-Government; Jul 3-4, 2003; Trinity College Dublin, Ireland.

Ebrahim, Z. and Irani, Z., 2005. E-government adoption: architecture and barriers. Business process management journal, 11(5), pp.589-611.

Eiglier, P., Langeard, E. and Lovelock, C.H., 1977. Marketing consumer services: New insights. Marketing Science Institute.

Elliman, T., 2006. Generating citizen trust in e-government using a trust verification agent: a research note. European and Mediterranean Conference on Information Systems.

Elmir, B. and Bounabat, B., 2013. Integrated public e-services interoperability assessment. International Journal of Information, Science, and Technology.

Elsheikh, Y. and Azzeh, M., 2014. What Facilitates the Delivery of Citizen-Centric E-Government Services in Developing Countries: Model Development and Validation Through Structural Equation Modeling. International Journal of Computer Science & Information Technology, 6(1), p.77.

ESCWA. 2007. national profile for the information society in the sultanate of Oman. united nations, New York.

Esteves, J. and Joseph, R.C., 2008. A comprehensive framework for the assessment of eGovernment projects. Government information quarterly, 25(1), pp.118-132.

Evans, D. and Yen, D.C., 2006. E-Government: Evolving relationship of citizens and government, domestic, and international development. Government information quarterly, 23(2), pp.207-235.

Everitt, B., Landau, S. and Leese, M., 2001. Cluster analysis. 4th. Arnold, London.

Ezz, I., 2003. December. Towards e-government adoption: some organizations challenges for the Egyptian government. In proceedings of the 2003 International Business Information Management Conference, December.

Fairchild, A.M. and Quansah, E.A., 2007. Approaching the digital divide in Sub-Saharan Africa: technological determinism or social constructivism?. International Journal of Knowledge and Learning, 3(6), pp.612-627.

Fang, Z., 2002. E-government in digital era: concept, practice, and development. International journal of the Computer, the Internet and management, 10(2), pp.1-22.

Featherman, M.S. and Pavlou, P.A., 2003. Predicting e-services adoption: a perceived risk facets perspective. International journal of human-computer studies, 59(4), pp.451-474.

Fischer, T., Smith, M.L. and Valk, J.H., 2013. E-Government for Development: ICTs in the Public Sector and the Evolving Citizen–Government Relationship. Connecting ICTs to Development.

Flicek, P., Amode, M.R., Barrell, D., Beal, K., Brent, S., Carvalho-Silva, D., Clapham, P., Coates, G., Fairley, S., Fitzgerald, S. and Gil, L., 2011. Ensembl 2012. Nucleic acids research, p.gkr991.

Fletcher, P.D., 2003. Leaderships and project success: lessons from high-impact government innovations. New Models of Collaboration: A Guide for Managers http://www. ctg. albany. edu/publications/online/new_models/essays/leadership.

Floropoulos, J., Spathis, C., Halvatzis, D. and Tsipouridou, M., 2010. Measuring the success of the Greek taxation information system. International Journal of Information Management, 30(1), pp.47-56.

Fontaine, R.G., Yang, C., Burks, V.S., Dodge, K.A., Price, J.M., Pettit, G.S. and Bates, J.E., 2009. Loneliness as a partial mediator of the relation between low social preference in childhood and anxious/depressed symptoms in adolescence. Development and psychopathology, 21(02), pp.479-491.

Fijnaut, C. and Huberts, L.W. eds., 2002. Corruption, integrity and law enforcement (pp. 3-32). Dordrecht: Kluwer law international.

Fishbein, M. and Ajzen, I., 1977. Belief, attitude, intention, and behavior: An introduction to theory and research.

FIELDS, C.R.I.O., Dimaggio, P.J. and Powell, W.W., 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. American Sociological Review, 48(2), pp.147-160.

Fonarow, G.C., Chelimsky-Fallick, C., Stevenson, L.W., Luu, M., Hamilton, M.A., Moriguchi, J.D., Tillisch, J.H., Creaser, J.A. and Albanese, E., 1992. Effect of direct vasodilation vs angiotensin-converting-enzyme inhibition on mortality in advanced heart failure: the Hy-C trial. J Am Coll Cardiol, 19, pp.842-850.

Fornell, C. and Larcker, D.F., 1981. Evaluating structural equation models with unobservable variables and measurement error. Journal of marketing research, pp.39-50.

Friedman, B., Khan Jr, P.H. and Howe, D.C., 2000. Trust online. Communications of the ACM, 43(12), pp.34-40.

Ganesan, S., 1994. Determinants of long-term orientation in buyer-seller relationships. the Journal of Marketing, pp.1-19.

Garland, R., 1991. The mid-point on a rating scale: Is it desirable. Marketing bulletin, 2(1), pp.66-70.

Gay, L.R., Mills, G.E. and Airasian, P.W., 2011. Educational research: Competencies for analysis and applications. Pearson Higher Ed.

Gauld, R. and Goldfinch, S., 2006. Dangerous enthusiasms: e-Government, computer failure and information systems development. Univ of Otago Pr.

Gefen, D., Straub, D. and Boudreau, M.C., 2000. Structural equation modeling and regression: Guidelines for research practice. Communications of the association for information systems, 4(1), p.7.

Gefen, D., Karahanna, E. and Straub, D.W., 2003. Trust and TAM in online shopping: an integrated model. MIS quarterly, 27(1), pp.51-90.

Ghaziri, H., 2003, December. Prerequisites for Building E-Government: The case of the Arab countries. In proceedings of the 2003 International Business Information Management Conference, December.

Giacobbi, Jr, P.R., Hausenblas, H.A. and Penfield, R.D., 2005. Further refinements in the measurement of exercise imagery: The exercise imagery inventory. Measurement in Physical Education and Exercise Science, 9(4), pp.251-266.

Gilbert, D., Balestrini, P. and Littleboy, D., 2004. Barriers and benefits in the adoption of e-government. International Journal of Public Sector Management, 17(4), pp.286-301.

Gil-García, J.R. and Pardo, T.A., 2005. E-government success factors: Mapping practical tools to theoretical foundations. Government information quarterly, 22(2), pp.187-216.

Gil-Garcia, J.R. and Martinez-Moyano, I.J., 2007. Understanding the evolution of e-government: The influence of systems of rules on public sector dynamics. Government Information Quarterly, 24(2), pp.266-290.

Gilmore, A. and D'Souza, C., 2006. Service excellence in e-governance issues: An Indian case study. JOAAG, 1(1), pp.1-14.

Gladwell, M., 2005. The moral-hazard myth. The New Yorker, 29, pp.44-49.

Goodhue, D.L. and Thompson, R.L., 1995. Task-technology fit and individual performance. MIS quarterly, pp.213-236.

Gold, A.H. and Arvind Malhotra, A.H.S., 2001. Knowledge management: An organizational capabilities perspective. Journal of management information systems, 18(1), pp.185-214.

Grant, G. and Chau, D., 2006. Developing a generic framework for e-government. Advanced Topics in Information Management, 5, pp.72-94.

Grazioli, S. and Jarvenpaa, S.L., 2000. Perils of Internet fraud: An empirical investigation of deception and trust with experienced Internet consumers. IEEE Transactions on Systems, Man, and Cybernetics-Part A: Systems and Humans, 30(4), pp.395-410.

Griffin, D. and Halpin, E., 2005. An exploratory evaluation of UK local e-government from an accountability perspective. The Electronic Journal of e-Government, 3(1), pp.13-28.

Grönlund, Å. and Horan, T.A., 2005. Introducing e-gov: history, definitions, and issues. Communications of the association for information systems, 15(1), p.39.

Gu, J.C., Lee, S.C. and Suh, Y.H., 2009. Determinants of behavioral intention to mobile banking. Expert Systems with Applications, 36(9), pp.11605-11616.

Gunter, B., 2006, September. Advances in e-democracy: overview. In B. Gunter ed.,, Aslib proceedings (Vol. 58, No. 5, pp. 361-370). Emerald Group Publishing Limited.

Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C., 1998. Multivariate data analysis New Jersey. USA: Englewood Cliffs.

Hair Jr, J.F., Money, A.H., Samouel, P. and Page, M., 2007. Research Methods forBusiness.

Hair, J.F., Sarstedt, M., Ringle, C.M. and Mena, J.A., 2012. An assessment of the use of partial least squares structural equation modeling in marketing research. Journal of the academy of marketing science, 40(3), pp.414-433.

Hair, J.F., 2010. Multivariate data analysis. Pearson College Division.

Hair, J.F., Ringle, C.M. and Sarstedt, M., 2011. PLS-SEM: Indeed a silver bullet. Journal of Marketing theory and Practice, 19(2), pp.139-152.

Hair Jr, J.F., Sarstedt, M., Hopkins, L. and Kuppelwieser, V.G., 2014. Partial least squares structural equation modeling (PLS-SEM): an emerging tool in business research| NOVA. The University of Newcastle's Digital Repository.

Hassanzadeh, M., Sharitabadi, S.R. and Derakhshan, M., 2010. Assessment of Service Quality at Central Library of Management and Planning Organization (MPO), Iran. International Journal of Information Science & Management, 8(1).

Hawabhay Rajnish, 2011, validation workshop on e-government strategy 2013- 2017, ministry of information & communication technology, bureau

Heeks, R., 1999. Information and communication technologies, poverty and development, development informatics. Paper No. 5. University of Manchester.

Heeks, R., 2002. Information systems and developing countries: Failure, success, and local improvisations. The information society, 18(2), pp.101-112.

Heeks, R., 2002. e-Government in Africa: Promise and practice. Information Polity, 7(2, 3), pp.97-114.

Heeks, R., 2006. Benchmarking eGovernment: Improving the National and International Measurement, Evaluation and Comparison of eGovernment. Evaluating information systems, 257.

Helbig, N., Gil-García, J.R. and Ferro, E., 2009. Understanding the complexity of electronic government: Implications from the digital divide literature. Government Information Quarterly, 26(1), pp.89-97.

Henseler, J., Ringle, C.M. and Sinkovics, R.R., 2009. The use of partial least squares path modeling in international marketing. Advances in international marketing, 20(1), pp.277-319.

Hepworth, M.E., 1989. Geography of the information economy. St. Martin's Press.

Hidayanto, A.N., Febriawan, D., Sucahyo, Y.G. and Purwandari, B., 2014. Factors influencing the use of E-Class. Journal of Industrial and Intelligent Information Vol, 2(2).

Hiller, J.S. and Belanger, F., 2001. Privacy strategies for electronic government. E-government, 200, pp.162-198.

Hirschfeld, B., 2012. Global Thesis Update: Technology and the Arab Spring, retrieved April 11, 2012 from http://worldperspectivesprogram. wordpress. com/2012/04/12/global (Doctoral dissertation, thesis-updatetechnology-and-the-arab-spring).

Ho, A.T.K. and Ni, A.Y., 2004. Explaining the adoption of e-government features a case study of Iowa county treasurers' offices. The American Review of Public Administration, 34(2), pp.164-180.

Hong, S.J. and Tam, K.Y., 2006. Understanding the adoption of multipurpose information appliances: The case of mobile data services. Information systems research, 17(2), pp.162-179.

Horst, M., Kuttschreuter, M. and Gutteling, J.M., 2007. Perceived usefulness, personal experiences, risk perception and trust as determinants of adoption of e-government services in The Netherlands. Computers in Human Behavior, 23(4), pp.1838-1852.

Howard, M., 2001. E-government across the globe: how will'e'change government. e-Government, 90, p.80.

Hsiao, C.H. and Yang, C., 2011. The intellectual development of the technology acceptance model: A co-citation analysis. International Journal of Information Management, 31(2), pp.128-136.

Huai, J., 2011, August. Quality evaluation of e-government public service. In Management and Service Science (MASS), 2011 International Conference on (pp. 1-4). IEEE.

Huang, Z. and Bwoma, P.O., 2003. An overview of critical issues of e-government. Issues of Information Systems, 4(1), pp.164-170.

Hung, S.Y., Chang, C.M. and Yu, T.J., 2006. Determinants of user acceptance of the e-Government services: The case of online tax filing and payment system. Government Information Quarterly, 23(1), pp.97-122.

Igbaria, M., Guimaraes, T. and Davis, G.B., 1995. Testing the determinants of microcomputer usage via a structural equation model. Journal of management information systems, 11(4), pp.87-114.

ITA, 2010, Oman e-government architecture framework (OEGAV) introduction to OEGAV, information technology authority, sultanate of Oman

Jaeger, P.T., 2003. The endless wire: E-government as global phenomenon. Government Information Quarterly, 20(4), pp.323-331.

Jarvenpaa, S.L. and Staples, D.S., 2000. The use of collaborative electronic media for information sharing: an exploratory study of determinants. The Journal of Strategic Information Systems, 9(2), pp.129-154.

Jose, J., Abidin, M.J.Z. and Jafre, M., 2015. Application of Information and Communication Technology Tools for English Language Teaching in an Omani Context. Special Issue on CALL No. 2.

Jensen, R., 2007. The digital provide: Information (technology), market performance, and welfare in the South Indian fisheries sector. The quarterly journal of economics, pp.879-924.

Jones, S., Irani, Z. and Sharif, A., 2007, January. E-government evaluation: Reflections on three organisational case studies. In System Sciences, 2007. HICSS 2007. 40th Annual Hawaii International Conference on (pp. 105-105). IEEE.

Johnson, P.D., 2007. Diaspora philanthropy: Influences, initiatives, and issues. The Philanthropic Initiative.

Junglas, I., Abraham, C. and Watson, R.T., 2008. Task-technology fit for mobile locatable information systems. Decision Support Systems, 45(4), pp.1046-1057.

Kaaya, J., 2004. Implementing e-government services in East Africa: Assessing status through content analysis of government websites. Electronic Journal of E-government, 2(1), pp.39-54.

Kamensky, J.M. and Burlin, T.J. eds., 2004. Collaboration: Using networks and partnerships. Rowman & Littlefield Publishers.

Kandiri, J.M., 2006. ICT policy in Kenya and ways of improving the existing policy. MSSAM a. Uonbi (Ed.) Nairobi: University of Nairobi.

Karacapilidis, N., Loukis, E. and Dimopoulos, S., 2005. Computer-supported G2G collaboration for public policy and decision-making. Journal of Enterprise Information Management, 18(5), pp.602-624.

Keramati, A. and Chelbi, A., 2011. The adoption of E-government services by employees in Iran, case study: Rasht municipality. Department of Business Administration and Social Sciences, Lulea University of Technology.

Kerlinger, F.N., 1986. Foundations of Behavioral Research. Orlando: Holt, Rinehart and Winston.

Kenny, C., 2003. The Internet and economic growth in less-developed Countries: A case of managing expectations?. Oxford Development Studies, 31(1), pp.99-113.

Kewan, C., Zhiyu, W., Liang, G., Xin, W. and Guoxi, L., 2011. Design and realization of a new type of glass-cleaning robot [J]. Microcomputer & Its Applications, 9, p.010.

Khan, G.F., Moon, J., Rhee, C. and Rho, J.J., 2010. E-government skills identification and development: toward a staged-based user-centric approach for developing countries. Asia Pacific Journal of Information Systems, 20(1), pp.1-31.

Kim, D.Y. and Grant, G., 2010. E-government maturity model using the capability maturity model integration. Journal of Systems and Information Technology, 12(3), pp.230-244.

Kim, S., Kim, H.J. and Lee, H., 2009. An institutional analysis of an e-government system for anti-corruption: The case of OPEN. Government Information Quarterly, 26(1), pp.42-50.

Kini, A. and Choobineh, J., 1998, January. Trust in electronic commerce: definition and theoretical considerations. In System Sciences, 1998., Proceedings of the Thirty-First Hawaii International Conference on (Vol. 4, pp. 51-61). IEEE.

Krad, I., Ibanez, E., Ela, E. and Gao, W., 2015. Operational Impacts of Operating Reserve Demand Curves on Production Cost and Reliability.

King, W.R. and He, J., 2006. A meta-analysis of the technology acceptance model. Information & management, 43(6), pp.740-755.

Kintana, M.L., Alonso, A.U. and Olaverri, C.G., 2006. High-performance work systems and firms' operational performance: the moderating role of technology. The International Journal of Human Resource Management, 17(1), pp.70-85.

Knabke, T. and Olbrich, S., 2015. The Impact of In-Memory Technology on the Agility of Data Warehouse-based Business Intelligence Systems-a preliminary Study among Experts. In Wirtschaftsinformatik (pp. 645-659).

Koh, C.E. and Prybutok, V.R., 2003. The three ring model and development of an instrument for measuring dimensions of e-government functions. Journal of Computer Information Systems, 43(3), pp.34-39.

Komiak, S.Y., Wang, W. and Benbasat, I., 2004. Trust building in virtual salespersons versus in human salespersons: Similarities and differences. E-service Journal, 3(3), pp.49-63.

Kramer, R.M., 1999. Trust and distrust in organizations: Emerging perspectives, enduring questions. Annual review of psychology, 50(1), pp.569-598.

Krejci, R.V. and Dan, D.W., Morgan. 1970.“. Determning Sample Size for Research Activities, pp.607-610.

Kumar, S, 2005, collaborative management: are state public agencies in developing countries ready for it? LMA convention, 1(1), 161-172.

Kumar, V., Munited Kingdomerji, B., Butt, I., & Persaud, A, 2007, factors for successful adoption: an ideal framework. Electronic journal of, 5(1), 63-76.

Kumar, R, 1996, research methodology: a step-by-step guide for beginners, London: material

LaVigne, M., 2001. Five Kinds of Know-How Make E-government Work Contact. Center for Technology in Government, E-government, http://www. netcaucus. org/books/egov2001/, Accessed April, 18, p.2004.

Lam, W., 2005. Barriers to e-government integration. Journal of Enterprise Information Management, 18(5), pp.511-530.

Management Sciences (ICM), 2011 International Conference on (Vol. 3, pp. 298-300). IEEE.

Langeard, E., Bateson, J.E. and Lovelock, C.H., Service Marketing: New Insights from Consumer and Managers. 1981. Cambridge, MA: Marketing Science Institute.

La Porte, T.M., Demchak, C.C. and De Jong, M., 2002. Democracy and bureaucracy in the age of the web empirical findings and theoretical speculations. Administration & Society, 34(4), pp.411-446.

Lean, O.K., Zailani, S., Ramayah, T. and Fernando, Y., 2009. Factors influencing intention to use e-government services among citizens in Malaysia. International Journal of Information Management, 29(6), pp.458-475.

Lee, Y. and Kozar, K.A., 2005. Investigating factors affecting the adoption of anti-spyware systems. Communications of the ACM, 48(8), pp.72-77.

Lee, J. and Kim, J., 2007. Grounded theory analysis of e-government initiatives: Exploring perceptions of government authorities. Government Information Quarterly, 24(1), pp.135-147.

Lee, E.J., Kwon, K.N. and Schumann, D.W., 2005. Segmenting the non-adopter category in the diffusion of internet banking. International Journal of Bank Marketing, 23(5), pp.414-437.

Lee, M. & Turban, E, 2001, a trust model for consumer internet shopping, international journal of electronic commerce, 6(1):75-91.

Lee, M.C, 2010, explaining and predicting users' continuance intention toward e-learning: an extension of the expectation–confirmation model, computers & education 54:506–516.

Lee G.G, and Lin H.F, "customer perceptions of e-service quality in online shopping", international journal of retail & distribution management, (2005), vol. 33, no. 2, pp. 161-176.

Lee, J., Park, S., Baek, I. and Lee, C., 2008, The impact of the brand management system on brand performance in B–B and B–C environments. Industrial Marketing Management, 37 (2008), pp. 848-855.

Lee-Kelley, L., & Kolsaker, A, 2004, the ''fit'' between supply assumptions and usage drivers. Electronic government international journal, 1(2), 130-140.

Leitold, H., Hollosi, A. and Posch, R., 2002. Security architecture of the Austrian citizen card concept. In Computer Security Applications Conference, 2002. Proceedings. 18th Annual (pp. 391-400). IEEE.

Lessa, L., Negash, S. and Amoroso, D.L., 2011. Acceptance of WoredaNet E-Government Services in Ethiopia: Applying the UTAUT Model.

Lewicki, R.J. and Bunker, B.B., 1995. Trust in relationships: A model of development and decline. Jossey-Bass.

Lewis, R.D., 2007. The cultural imperative: Global trends in the 21st century.

Lewis, W., Agarwal, R. and Sambamurthy, V., 2003. Sources of influence on beliefs about information technology use: An empirical study of knowledge workers. MIS quarterly, pp.657-678.

Li, H. and Suomi, R., 2009. A proposed scale for measuring e-service quality. International Journal of u-and e-Service, Science and Technology, 2(1), pp.1-10.

Lin, C.H., Wu, Y.J., Chang, C.C., Wang, W.H., Lee, C.Y., 2012. The alliance innovation performance of R&D alliances-the absorptive capacity perspective. Technovation 32, 282-292

Linders, D., 2012. From e-government to we-government: Defining a typology for citizen coproduction in the age of social media. Government Information Quarterly, 29(4), pp.446-454.

Loh, C. and Cullen, R., 2005. Political Reform in Hong Kong: the Principal Officials Accountability System. The first year (2002–2003). Journal of Contemporary China, 14(42), pp.153-176.

Lowry, P.B. and Gaskin, J., 2014. Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: when to choose it and how to use it. Professional communication, IEEE transactions on, 57(2), pp.123-146.

Lu, J., Yao, J.E. and Yu, C.S., 2005. Personal innovativeness, social influences and adoption of wireless Internet services via mobile technology. The Journal of Strategic Information Systems, 14(3), pp.245-268.

Lu, Y., Cao, Y., Wang, B. and Yang, S., 2011. A study on factors that affect users' behavioral intention to transfer usage from the offline to the online channel. Computers in Human Behavior, 27(1), pp.355-364.

Lu, J., Liu, C., Yu, C.S. and Wang, K., 2008. Determinants of accepting wireless mobile data services in China. Information & Management, 45(1), pp.52-64.

Loader, B, 2009, beyond e-government. London: Routledge.

Lu, Z., Feng, Y., Wang, C. and Fang, R., 2011, September. E-Government Satisfaction: A Conceptual Model. In Information Technology, Computer Engineering and Management Sciences (ICM), 2011 International Conference on (Vol. 3, pp. 298-300). IEEE.

Luftman, J.N, 1996, competing in the information age: strategic alignment in practice, oxford university press, New York; oxford, pp. 1-20

Madu C N, and Madu A A, "dimensions of e-quality", international journal of quality & reliability management, (2002), vol. 19, no. 3, pp. 246-259.

Marc, H. and Seang-Tae, K., 2008. Digital Governance in Municipalities Worldwide. National Center for Public Performance, Newark. http://andromeda. rutgers. edu/~ egovinst/Website/PDFs/100% 20City% 20Survey, 202007, p.20.

Marche, S. and Mcniven, J.D, 2003, 'e-government and e-governance: the future isn't what it used to be,' Canadian journal of administrative sciences-revue comedienne des sciences de l administration, vol. 20, 1, mar, pp 74-86

Maria Wimmer and Efthimios Tambouris, 2002, online one-stop government: a working framework and requirements, in proceedings of the IFIP world computer congress, august 26-30, 2002, Montreal

Marták, J. and Schlosser, Š., 2006. Pertraction of organic acids through liquid membranes containing ionic liquids. Desalination, 199(1), pp.518-520.

Mayer, R., Davis, J., & Schoorman, F, 1995, an integrative model of organizational trust, Academy of management review, 20(3):709-734.

Mcclelland, S. B, 1994, training needs assessment data-gathering methods: part 2 – individual interviews, European industrial training, 18(2), 27-31.

McLeod, A.J. and Pippin, S.E., 2009, January. Security and privacy trust in e-government: Understanding system and relationship trust antecedents. In System Sciences, 2009. HICSS'09. 42nd Hawaii International Conference on (pp. 1-10). IEEE.

McCrae, R.R. and Costa, P.T., 2003. Personality in adulthood: A five-factor theory perspective. Guilford Press.

McGill, T.J. and Hobbs, V.J., 2008. How students and instructors using a virtual learning environment perceive the fit between technology and task. Journal of Computer Assisted Learning, 24(3), pp.191-202.

Mcknight, D., Cummings, L., & Chervany, N, 1998, initial trust formation in new organizational relationships, academy of management review 23(3):472-490.

Mcknight, H., Choudhury, V. & Kacmar, C, 2002, developing and validating trust measures for e-commerce: an integrative typology, information systems research, 13(3):334–359.

Mehta, R., & Sivads, E, 1995, comparing response rates and response CTMTENT in mail versus electronic surveys, the market research society 37(4), 429-440.

Meyerson, D., Weick, K.E. and Kramer, R.M., 1996. Swift trust and temporary groups. Trust in organizations: Frontiers of theory and research, 166, p.195.

McNabb, D.E., 2002. Research methods in public administration and nonprofit management. ME Sharpe.

Melitski, J., Holzer, M. and Norris, D., 2007. Current Issues and Trends in E-Government Research.

Meso, P., Datta, P., and Mbarika, V, 2006, moderating information and communication technologies' influences on socioeconomic development with good governance: a study of the developing countries, journal of the American society for information science and technology, vol. 57, no.2, pp.186 – 197

Michel Helen, 2005, "e-administration, e-government, e-governance and the learning city: a typology of citizenship management using ICTs" the electronic journal of e-government volume 3 issue 4, pp 213-218, available online at www.ejeg.com

Min, Q. and Li, Y., 2012, October. Communication performance model in the context of social communication technology. In Management of e-Commerce and e-Government (ICMeCG), 2012 International Conference on (pp. 360-363). IEEE.

Mintzberg, H, 1996, managing government, governing management, Harvard business review, vol. 76 no. 3, pp. 75-83.

Mirchandani, D.A., Johnson Jr, J.H., and Joshi, K, 2008, 'viewpoints of citizens towards in Thailand and Indonesia: a multi-group analysis', Inf Syst front, 10: 483-497.

Misuraca, G., 2007. E-governance in Africa, from theory to action: A handbook on ICTs for local governance. Idrc.

Mohammed, S.A. and Sriram, B., 2014. Major challenges in developing a successful e-government: A review on the Sultanate of Oman.

Moore, G.C. and Benbasat, I., 1991. Development of an instrument to measure the perceptions of adopting an information technology innovation. Information systems research, 2(3), pp.192-222.

Moon, M.J., 2002. The evolution of e-government among municipalities: rhetoric or reality?. Public administration review, 62(4), pp.424-433.

Morawska, A., Sanders, M.R., Haslam, D., Filus, A. and Fletcher, R., 2014. Child adjustment and parent efficacy scale: Development and initial validation of a parent report measure. Australian Psychologist, 49(4), pp.241-252.

NCSI, National Centre for Statistics & Information, 2014, www.ncsi.gov.om

Naqvi, S.J., Al-Shihi, H. and Ali, S., 2011. Mobile services in Oman: A feedback on SMS-parking service. Proceedings of Informing Science & IT Education (InSITE-2011), pp.18-23.

NCSI, 2014. National center for statistics and information. [Online] available at: <http://www.ncsi.gov.om> [accessed 20 April 2015].

Ndou, V., 2004. E-government for developing countries: opportunities and challenges. The electronic journal of information systems in developing countries, 18.

Nikkhahan, B., Aghdam, A.J., & Sohrabi, S, 2009, e-government security: a honey net approach. International journal of advanced science and technology, 5, 75-84.

Nixon, P.G. & Koutrakou, V.N, 2007, e-government in Europe: re-booting the state, London: Routledge.

Nor, K.M. and Pearson, J.M., 2008. An exploratory study into the adoption of internet banking in a developing country: Malaysia. Journal of Internet Commerce, 7(1), pp.29-73.

Nusair, K. and Kandampully, J., 2008. The antecedents of customer satisfaction with online travel services: a conceptual model. European Business Review, 20(1), pp.4-19.

OECD, 2003, rethinking e-government services: user-centered approaches, organization for economic cooperation and development OECD, OECD publishing, retrieved February 18, 2015 from http://www.planejamento.gov.br/secretarias/upload/arquivos/seges/arquivos/ocde2011/oecd_rethinking_approaches.pdf.

OECD, 2009, rethinking e-government services: user-centered approaches, organization for economic cooperation and development OECD, OECD publishing, retrieved February 18, 2015 from http://www.planejamento.gov.br/secretarias/upload/arquivos/seges/arquivos/ocde2011/oecd_rethinking_approaches.pdf.

Oerlemans, L.A., Knoben, J. and Pretorius, M.W., 2013. Alliance portfolio diversity, radical and incremental innovation: The moderating role of technology management. Technovation, 33(6), pp.234-246.

Office of management and budget, 2002, e-government strategy, Washington, D.C.:U.S. government printing office, available from: http://www.whitehouse.gov/omb/inforeg/egovstrategy.pdf [accessed 1/11/2013]

Omari, A., 2013. Technology adoption in the Arabian Gulf countries: The case of e-Government. International Journal of Computer Science, Engineering and Information Technology, 3(3), pp.1-8.

Orlikowski, W. & Baroudi, J, 1991, studying information technology in organizations: research approaches and assumptions. Information systems research, 2(1):1-28.

Osborne D. and Gaebler T, 1992, reinventing government: how the entrepreneurial spirit is transforming the public sector, public policy and administration, pp. 1-50

Osman, M.E.T., 2010. Educational Portal in Oman: Toward a connected community. AMARABAC, SQU, Sultanate of Oman.

Osman, I H., Anouze, A L., Irani, Z., Al-Ayoubi, B., Lee, H., Balci, A., Medeni, T D. and Weerakkody, V., 2014. Cobra framework to evaluate e-government services: a citizen-centric perspective. Government information quarterly, 31(2), pp.243-256.

Palanisamy, R. and Mukerji, B, 2012, security and privacy issues in e-government, IGI global, 236-248

Pallant, J., 2011. Multivariate analysis of variance. SPSS survival manual. Crow's nest: Allen & Unwin, 20(11), pp.283-96.

Papadomichelaki, X. and Mentzas, G., 2012. e-GovQual: A multiple-item scale for assessing e-government service quality. Government information quarterly, 29(1), pp.98-109.

Parasuraman A, Zeithaml V A, and Berry L L, 1988, "SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality", journal of retailing, vol. 64, no. 1, pp. 12-40.

Parker, G., Tupling, H. and Brown, L B., 1979. a parental bonding instrument. British journal of medical psychology, 52(1), pp.1-10.

Pavlou, P. & Fygenson, M, 2006, understanding and predicting electronic commerce adoption: an extension of the theory of planned behavior. Miss quarterly, 30(1):115-142.

Pavlou, P, 2003, consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model. International journal of electronic commerce, 7(3):69–103.

Pavlou, P., & Gefen, D, 2004, building effective online marketplaces with institution-based trust. Information systems research 15(1):37–59.

Payne, G. and Payne, J, 2004, key concepts in social research, sage publications, London,

Pendergrass, L A, Hansen, J I C., Neuman, J L and Nutter, K J., 2003. Examination of the concurrent validity of scores from the CISS for student-athlete college major selection: a brief report. Measurement and evaluation in counseling and development, 35(4), p.212.

Peterson, R., & Wilson, W, 1992, measuring customer satisfaction: fact and artifact, the academy of marketing science, 20(1), 61-71.

Peter, J., Ryan, M., 1976. An investigation of perceived risk at the brand level. Journal of marketing research 13, 184–188.

Phang, C.W., Sutanto, J., Li Y. & Kankanhalli, A, 2005, senior citizens' adoption of e-government: in quest of the antecedents of perceived usefulness, proceedings of the 38th Hawaii international conference on system sciences, IEEE.

Pina, V., Torres, L. and Royo, S, 2007, are ICTs improving transparency and accountability in the EU regional and local governments? An empirical study, public management, vol. 85.

Plà, L.M., Sandars, D.L. and Higgins, A.J., 2013. A perspective on operational research prospects for agriculture. Journal of the Operational Research Society, 65(7), pp.1078-1089.

Polit, D.F. and Beck, C.T., 2012. Trustworthiness and integrity in qualitative research. In Nursing research. Generating and assessing evidence for nursing practice (pp. 582-601). Wolters Kluwer Health Philadelphia.

Popham, W J, 2008, All about assessment / a misunderstood grail. Educational leadership, 66(1), 82-83.

Prajogo, D., Chowdhury, M., Yeung, A.C. and Cheng, T.C.E., 2012. The relationship between supplier management and firm's operational performance: A multi-dimensional perspective. International Journal of Production Economics, 136(1), pp.123-130.

Ramayah, T., Lee, J.W.C. and In, J.B.C., 2011. Network collaboration and performance in the tourism sector. Service Business, 5(4), pp.411-428.

Rana, N.P., Dwivedi, Y.K. and Williams, M.D., 2015. A meta-analysis of existing research on citizen adoption of e-government. Information Systems Frontiers, 17(3), pp.547-563.

Ratnasingham, P., 1998. The importance of trust in electronic commerce. Internet research, 8(4), pp.313-321.

Ravanavar, G.M. and Charantimath, P.M., 2012. Strategic formulation using TOWS matrix–A case study. International Journal of Research and Development, 1(1), pp.87-90.

Reffat, R., 2003, May. Developing a successful e-government. In Proceedings of the Symposium on E-government: Opportunities and Challenge, Muscat Municipality, Oman, IV1-IV13Ramayah, T., Lee, J W C. and In, J B C., 2011. Network collaboration and performance in the tourism sector. Service business, 5(4), pp.411-428.

Reddick, C. G, 2004, a two-stage model of growth: theories and empirical evidence for united states cities, government information quarterly, volume 21, issue 1, 2004, pages 51-64

Reddick, C, 2005, citizen interaction with e-government: from the streets to servers? Government information quarterly, 22(1), 38-57.

Reddick, C.G. ed., 2010. Politics, Democracy and E-Government: Participation and Service Delivery: Participation and Service Delivery. IGI Global.

Reddick, C.G. ed., 2010. Citizens and E-Government: Evaluating Policy and Management: Evaluating Policy and Management. IGI Global.

Reece, B., 2006, literature review, journal of, vol. 3 (1)

Relyea, H, 2002, E-GOV: introduction and overview. Government information quarterly 19(1):9-35.

Ringim, K.J., 2012. Effect of Business Process Reengineering Factors on Organizational Performance: IT Capability as a Moderator (Doctoral dissertation, Universiti Utara Malaysia).

Rogers, L.L., 1976, March. Effects of mast and berry crop failures on survival, growth, and reproductive success of black bears. In Transactions of the North American Wildlife and Natural Resources Conference (Vol. 41, No. 43, pp. 1-438).

Rogers, Everett, 2003, Diffusion of Innovations, 5th Edition. Simon and Schuster. ISBN 978-0-7432-5823-4.

Rokhman, A., 2011. e-Government adoption in developing countries; the case of Indonesia. Journal of Emerging Trends in Computing and Information Sciences, 2(5), pp.228-236.

Romano, C, 1989, research strategies for small business: a case study approach, international small business, 7(4), 35-43.

Roscoe, J.T., 1975. Fundamental research statistics for the behavioral sciences [by] John T. Roscoe. New York, NY: Holt, Rinehart and Winston.

Saarinen, K.M., Juntunen-Backman, K., Järvenpää, A.L., Kuitunen, P., Lope, L., Renlund, M., Siivola, M. and Savilahti, E., 1999. Supplementary feeding in maternity hospitals and the risk of cow's milk allergy: a prospective study of 6209 infants. Journal of Allergy and Clinical Immunology, 104(2), pp.457-461.

Sá, F., Rocha, Á. and Cota, M.P., 2015. Potential dimensions for a local e-Government services quality.

Sahu, G.P., and Gupta, M.P, 2007, 'users' acceptance of: a study of Indian central excise', international journal of electronic government research, 3 (3):1-21.

Sambasivan, M., Patrick Wemyss, G. and Che Rose, R., 2010. User acceptance of a G2B system: A case of electronic procurement system in Malaysia. Internet Research, 20(2), pp.169-187.

Santos J, 2003, “e-service quality - a model of virtual service dimensions”, managing service quality, vol.13, no. 3, pp. 233-247.

Santos, R. and Heeks, R., 2003. ICTs and intra-governmental structures at local, regional and central levels: updating conventional ideas. E-Government Short Papers, 7.

Sarrayrih, M.A. and Sriram, B., 2015. Major challenges in developing a successful e-government: A review on the Sultanate of Oman. Journal of King Saud University-Computer and Information Sciences, 27(2), pp.230-235.

Sarstedt, M., Ringle, C.M., smith, d., reams, r. and hair, j.f., 2014. Partial least squares structural equation modeling (PLS-SEM): a useful tool for family business researchers. Journal of family business strategy, 5(1), pp.105-115.

Saxena, K.B.C., 2005. Towards excellence in e-governance. International Journal of Public Sector Management, 18(6), pp.498-513.

Schaupp, L.C. and Carter, L., 2005. E-voting: from apathy to adoption. Journal of Enterprise Information Management, 18(5), pp.586-601.

Schaupp, L.C., Carter, L. and McBride, M.E., 2010. E-file adoption: A study of US taxpayers’ intentions. Computers in Human Behavior, 26(4), pp.636-644.

Schmid, R.F., Bernard, R.M., Borokhovski, E., Tamim, R.M., Abrami, P.C., Surkes, M.A., Wade, C.A. and Woods, J., 2014. The effects of technology use in postsecondary education: A meta-analysis of classroom applications. Computers & Education, 72, pp.271-291.

Schulman, J.H., Dell, R.D. and Gord, J.C., Schulman, Joseph H., Dell, Robert Dan, Gord and John C., 2000. System of implantable devices for monitoring and/or affecting body parameters. U.S. Patent 6,164,284.

Sekaran, U, 2000, research methods for business: New York, USA: john wiley and sons, Inc.

Sekaran, U, 2003, research methods for business, a skill building approach (4 ed.): New York.

Sekaran, U. and Bougie, R., 2011. Research method for business: A skill building approach.

Seifert, J.W., 2003, January. A primer on e-government: Sectors, stages, opportunities, and challenges of online governance. Library of Congress Washington DC Congressional Research Service.

Serageldin, I., 2011. Science and the Arab spring. Issues in Science and Technology, 27(4), p.27.

ShaemiBarzaki, A., Baharestan, O. and Akbari, P., 2015. The Analyzing Effect of Using Information Technology and Entrepreneurial Orientation on Organizational Performance in Manufacturing Pharmaceutical Firms. Advanced Social Humanities and Management, 1(3), p.2014.

Shahin, Y., Khan, J.A. and Chetter, I., 2012. Angiotensin converting enzyme inhibitors effect on arterial stiffness and wave reflections: a meta-analysis and meta-regression of randomised controlled trials. Atherosclerosis, 221(1), pp.18-33.

Shapiro, S.P., 1987. The social control of impersonal trust. American journal of Sociology, pp.623-658.

Sharma, S.K., Govindaluri, S.M. and Sharma, R.K., 2013. A two-staged Regression-Neural Network Model for Understanding and Predicting the Quality Determinants of E-Government Services in Oman. International Foundation for Research and Development (IFRD), p.57.

Sharma, S., 1996. Applied Multivariate Techniques, New York, John Willey & Sons.

Sharma, A., and Dave, S., 2011, Entrepreneurial orientation: performance level, SCMS Journal of Indian Management, 11 (4), pp. 44-52.

Silcock, R, 2001, what is? Parliamentary affairs, vol. 54, pp. 88-101.

Silva, L., 2007. Post-positivist Review of Technology Acceptance Model. Journal of the Association for Information Systems, 8(4), p.11.

Slyke, C.V., Bélanger, F., Johnson, R.D. and Hightower, R., 2010. Gender-based differences in consumer e-commerce adoption. Communications of the association for information systems, 26(1), p.2.

Sohn C, and Tadisina S K,, 2008, "development of e-service quality measure for the internet-based financial institutions", total quality management & business excellence, vol.19, no.9, pp. 903-918.

Sørnes, J.O., Stephens, K.K., Sætre, A.S. and Browning, L.D., 2004. The reflexivity between ICTs and business culture: Applying Hofstede's theory to compare Norway and the United States. Informing Science, 7(1), pp.1-30.

Stanley, D.M., Cumming, J., Standage, M. and Duda, J.L., 2012. Images of exercising: Exploring the links between exercise imagery use, autonomous and controlled motivation to exercise, and exercise intention and behavior. Psychology of Sport and Exercise, 13(2), pp.133-141.

Sukasame, N., 2004. The development of e-service in Thai government. BU Academic Review, 3(1), pp.17-24.

Surjadjaja, H., Ghosh, S. and Antony, J., 2003. Determining and assessing the determinants of e-service operations. Managing Service Quality: An International Journal, 13(1), pp.39-53.

Su KW, Chang HY and Wang KC, 2011, a practical approach for user interface design of a g2b based official document exchange system in Taiwan, ICIC international, Taiwan. 6423-6436.

Tabachnick, B.G., Fidell, L.S. and Osterlind, S.J., 2001. Using multivariate statistics.

Tat-Kei Ho, A., 2002. Reinventing local governments and the e-government initiative. Public administration review, 62(4), pp.434-444.

Tan, C.W., Benbasat, I. and Cenfetelli, R.T., 2008, January. Building citizen trust towards e-government services: do high quality websites matter?. In Hawaii International Conference on System Sciences, Proceedings of the 41st Annual (pp. 217-217). IEEE.

Tan, J. and Qi, J., 2009, September. An acceptance model of wireless mobile data services in China: combining TAM with consumer behavior model. In 2009 5th International Conference on Wireless Communications, Networking and Mobile Computing (pp. 1-4). IEEE.

Tan, Y.H., Thoen, W. and Ramanathan, S., 2001, June. A survey of electronic contracting related developments. In Proceddings of the 14th Bled Electronic Commerce Conference, Bled, Slovenia.

Tapscott, D., 1996. The digital economy: Promise and peril in the age of networked intelligence (Vol. 1). New York: McGraw-Hill.

Taylor, S. & Todd, P, 1995a, understanding information technology usage: a test of competing models. Information systems research, 6(2):144-176.

Taylor, S. & Todd, P, 1995b, decomposition and crossover effects in the theory of planned behavior: a study of consumer adoption intentions. International journal of research in marketing, 12:137-155.

The World Bank, 2002, the e-government handbook for developing countries, infodev and center for democracy and technology, Washington, dc, USA. Available from: http://www.cdt.org/egov/handbook/2002-11-14egovhandbook.pdf [accessed 1/11/2013]

Thelen, M., 1919. Public Service under Government Operation of the Railroads. The Annals of the American Academy of Political and Social Science, 86, pp.17-34.

Thompson S.H. Teo, T.S.H & Liu, J, 2007, consumer trust in e-commerce in the United States, Singapore and china. Omega 35:22–38.

Thyer, 1993, applying single-case evaluation in social work, social work online, 26 699-717

Tipton, F.B., 1981. Government policy and economic development in Germany and Japan: A Skeptical Reevaluation. Journal of Economic History, 41(1), pp.139-150.

Torres, L., Pina, V. and Royo, S., 2005. E-government and the transformation of public administrations in EU countries: Beyond NPM or just a second wave of reforms?. Online Information Review, 29(5), pp.531-553.

Thorne, C., 1918. Government Operation of American Railroads. The ANNALS of the American Academy of Political and Social Science, 76, pp.84-110.

Tolbert, C.J. and Mossberger, K., 2006. The effects of e-government on trust and confidence in government. Public administration review, 66(3), pp.354-369.

Turner, B., Brandenberg, S.J. and Stewart, J.P., 2013. Evaluation of collapse and non-collapse of parallel bridges affected by liquefaction and lateral spreading.

UN economic and social council, 2003, enhancing the capacity of public management to implement the United Nations millennium declaration, status of and trends in the development

UN economic and social council, 2012, enhancing the capacity of public management to implement the United Nations millennium declaration, status of and trends in the development

United Nations. Department of Economic, 2010. United Nations E-government Survey 2010: Leveraging E-government at a Time of Financial and Economic Crisis (Vol. 2). United Nations Publications.

United Nations. Department of Economic, 2012, united nation's e-government survey 2012: e-government for the people (Vol. 2), pp. 449-472.

Unger, P. and Dougherty, R., 2013. Accreditation: Facilitating world trade. In International Accreditation Forum. Retrieved July (Vol. 18, p. 2013).

Van Der Marel, S., Majowicz, A., Kwikkers, K., Van Logtenstein, R., Te Yelde, A.A., De Groot, A.S., Meijer, S.L., Van Deventer, S.I., Petry, H., Hommes, D.W. and Ferreira, V., 2012. Adeno-associated virus mediated delivery of tregitope 167

ameliorates experimental colitis. World journal of gastroenterology: WJG, 18(32), p.4288.

Varian, H.R., Farrell, J. and Shapiro, C., 2004. The economics of information technology: An introduction. Cambridge University Press.

Vencatachellum, I. and Pudaruth, S., 2010. Investigating E-Government Services Uptake in Mauritius: A User's Perspective. International Research Symposium in Service Management ISSN 1694-0938.

Venkatesh, V, 2000, 'determinants of perceived ease of use: integrating control, intrinsic motivation, and emotion into the technology acceptance model', information systems research, 11 (4): 342-365.

Venkatesh, V., Davis, F.D. and Morris, M.G., 2007. Dead or alive? The development, trajectory and future of technology adoption research. Journal of the association for information systems, 8(4), p.267.

Venkatesh, V., Morris, M., David, G. & David, F, 2003, user acceptance of information technology: toward a unified view, miss quarterly 27(3):425–478.

Venkatesh, V. and Speier, C., 1999. Computer technology training in the workplace: A longitudinal investigation of the effect of mood. Organizational behavior and human decision processes, 79(1), pp.1-28.

Ward J., and Peppard J., 2002, strategic planning for information systems, 3rd ed. New York: Wiley, pp. 1-70

Warkentin, M., Gefen D., Pavlou P.A. & Rose, G, 2002, encouraging citizen adoption of e-government by building trust. Electronic markets, 12(3), 157-162.

Weerakkody, V., Janssen, M. and Dwivedi, Y.K., 2011. Transformational change and business process reengineering (BPR): Lessons from the British and Dutch public sector. Government Information Quarterly, 28(3), pp.320-328.

Weihrich, H., 1982. The TOWS matrix—A tool for situational analysis. Long range planning, 15(2), pp.54-66.

Wells, R.O., 2007. Differential analysis on complex manifolds (Vol. 65). Springer Science & Business Media.

Wescott, C.G., 2001. E-Government in the Asia-pacific region. Asian Journal of Political Science, 9(2), pp.1-24.

West, D. M, 2004, 'the transformation of services deliverance and citizen attitudes'. Public management review, 64 (1): 15-27.

Wisniewski, M., 1996. Measuring service quality in the public sector: the potential for SERVQUAL. Total quality management, 7(4), pp.357-366.

Wood-Harper, T., Ibrahim, O. and Ithnin, N., 2004, March. An interconnected success factor approach for service functional in Malaysian electronic government. In Proceedings of the 6th international conference on Electronic commerce (pp. 446-450). ACM.

Wolfinbarger, M. and Gilly, M.C., 2003. eTailQ: dimensionalizing, measuring and predicting etail quality. Journal of retailing, 79(3), pp.183-198.

Wong, M., Nishimoto, H., Nishigaki, Y. and Stephen, J., 2013. Use of satisfaction-satisfaction matrix (SSM) to evaluate e-government services from the perspective of Japanese citizens and government service providers. In 24th Australasian conference on information systems (ACIS) (pp. 1-10). Remit university.

Wothke, W., 2010. Introduction to structural equation modeling course notes. Carolina del Norte: SAS Institute Inc.

Wu, A.D., Li, Z. and Zumbo, B.D., 2007. Decoding the meaning of factorial invariance and updating the practice of multi-group confirmatory factor analysis: a demonstration with times data. Practical assessment, research and evaluation, 12(3), pp.1-26.

Wymer W, & Carsten, J, 1992, alternative ways to gather opinion, HR magazine, 37(4), 71-80

Xin-jian, L.W.D.S., 2008. Integration Framework of Multi-source Heterogeneous Spatial Information Based on Web Services [J]. Microcomputer Information, 21, p.010.

Xu, S., Yoon, H.J. and Tourassi, G., 2014. A user-oriented web crawler for selectively acquiring online content in e-health research. Bioinformatics, 30(1), pp.104-114.

Ya Ni, A. and Bretschneider, S., 2007. Th e Decision to Contract Out: A Study of Contracting for E-Government Services in State Governments. Public Administration Review, 67(3), pp.531-544.

Yang, S., Lu, Y., Gupta, S., Cao, Y. and Zhang, R., 2012. Mobile payment services adoption across time: An empirical study of the effects of behavioral beliefs, social influences, and personal traits. Computers in Human Behavior, 28(1), pp.129-142.

Yang, Z. and Jun, M., 2002. Consumer perception of e-service quality: from internet purchaser and non-purchaser perspectives. Journal of Business strategies, 19(1), p.19.

Yang, Z., Peterson, R.T. and Cai, S., 2003. Services quality dimensions of Internet retailing: An exploratory analysis. Journal of services marketing, 17(7), pp.685-700.

Yee, g., El-Khatib, K., Korba, L., Patrick, K.A.S., Song, R. and Xu Y, 2005, privacy and trust in e-government, electronic government strategies and implementation, 145-190.

Yimbo, W.O., 2011. Analyzing E-Government in Developing Countries using a Stages Model Approach: A Case Study (Doctoral dissertation, UNIVERSITY OF MINNESOTA).

Zeithaml, V.A., 1981. HOW CDNSUPER EVALUATION PROCESSES DIFFER BETWEEN GOODS AND SERVECES.

Zhang, L., Luo, Y.L., Tao, F., Ren, L. and Guo, H., 2010. Key technologies for the construction of manufacturing cloud. Computer Integrated Manufacturing Systems, 16(11), pp.2510-2520.

Zhao, J. J., Truell, A., & Alexander, M. W, 2008, characteristics and effectiveness of the U.S. state e-government-to-business services, the delta pi epsilon journal, l(2), 100-127.

Zhou, T., 2008, October. Explaining virtual community user knowledge sharing based on social cognitive theory. In 2008 4th International Conference on Wireless Communications, Networking and Mobile Computing (pp. 1-4). IEEE.

Zhiyuan, F, 2002, in digital era: idea, practice, and development. International journal of the computer, the internet and management, vol. 10, no.2, 2002, p 1-22

Zeithaml V.A, "service excellence in electronic channels", managing service quality, (2002), vol. 12, no.3, pp. 135138.

Zikmund, W. G, 2000, business research methods, Orlando, Philadelphia, USA: the Dryden press, Harcourt college publishers.

Zikmund, W. G, 2003, business research methods (3rd ed.): mason: Thompson.

APPENDECIES

APPENDIX 1 THESIS QUESTIONNAIRE

Brief about e-Government in Sultanate of Oman
نبذه عن الحكومة الرقمية في سلطنة عمان

Government of Sultanate of Oman has realized the importance of moving towards the information century. Therefore, e-Government initiatives were launched in Oman as a part of overall country information technology in 1998

His Majesty Al Sultan Qaboos Bin Said spoke about the importance of adopting and the usage of the new technology in the Omani daily life style on 11th Nov 2008. As a response to His Majesty's speech, Oman Government decided to boost up the process of initiating the e-government. Therefore, Omani Government used framework to move towards using Information and Communication Technology (ICT) as a platform for delivering and offering services and it has established a governmental agency named Information Technology Authority (ITA) associated and responsible of the transaction from old manual traditional service governmental system towards e-Government

This survey is for evaluating the e- government progress in the current situation no about what it will be in the future. Please evaluate the current situation honestly even if you feel that there is no different between the old and new system and you still have to reach agencies regularly for completing, applying and get governmental services

Your participation involves completing a 5 pages survey. The survey will take approximately 5-10 minutes to complete. Your participation in filling this survey is greatly appreciated. Please know that the information you provide is essential in understanding the effect of e- Government system in the Government Operation Excellence. Thank you in advance for participating in this research.

أدركت حكومة سلطنة عمان أهمية السعي والإنتقال من النظام الحكومي التقليدي إلى النظام الرقمي لمواكبة العصر. لهذا فإن مبادرات مشروع الحكومة الرقمية في السلطنة بدأت ملامحها فعليا عام 1998 م بناء على التوجيهات السامية لحضرة صاحب الجلالة السلطان قابوس بن سعيد المعظم 11 نوفمبر 2008 للسعي الحثيث للإنتقال للنظام الرقمي, قامت الحكومه الرشيده بتسريع

المشروع وتهيئة البنية التحتية لتقنية المعلومات والإتصالات وقامت أيضا بتأسيس هيئة حكومية معنية بالإنتقال من النظام التقليدي إلى نظام الحكومة الرقمية المعاصر تحت مسمى هيئة تقنية المعلومات

هذا الإستبيان يهدف لتقييم تقدم مشروع الحكومه الرقميه في السلطنه ووضعها حاليا فالرجاء كل الرجاء عند عمل الإستبيان لا تضع تقييمك باعتبار ما سيكون ولكن ضعه على أساس ما هو موجود وبدقه وشفافيه حتى ولو كنت لا ترى أي إختلاف بين النظام القديم والجديد وما زلت بحاجة إلى التواجد في الهيئات والمؤسسات والجهات الحكوميه لإتمام وتقديم الطلبات والحصول على الخدمات الحكومية تتضمن مشاركتك في هذا الإستبيان, إستكمال 5 صفحات فقط وستحتاج منك حوالي 5 الى 10 دقائق فقط لاستكمالها. وأشكر لم مساهمتك ومشاركتك في الإستبيان لأن هذه المعلومات ستساعد في فهم العلاقه بين التشغيل المتميز للحكومه وبين الحكومه الرقميه

The relationship between Government Operation Excellence and e-Government system in Sultanate of Oman

العلاقة بين التشغيل المتميز للحكومه وبين نظام الحكومه الرقميه في سلطنة عمان

General information

معلومات عامه

* 1. Gender **(الجنس)**

- Male (ذكر)
- Female (أنثى)

* 2. Age **(العمر)**

- 18 - 30
- 31 - 40
- 41 - 50
- 51 - 60

* 3. Region **(المحافظه)**

* 4. Working place **(مكان العمل)**

- Not Working or private personal business (لا أعمل أو أعمال خاصه في)
- Private sector (القطاع الخاص في)
- Public sector (القطاع الحكومي)

*** 5. Do you know the services and the uses associated and provided by e-Government system (e-Oman)?**

هل عندك دراية عن الخدمات والإستخدامات المتوفرة عن طريق نظام الحكومه الرقميه الحالي بالسلطنه المسمى بعمان الرقميه؟

- Yes (نعم)
- No (لا)

The relationship between Government Operation Excellence and e-Government system in Sultanate of Oman

العلاقة بين التشغيل المتميز للحكومه وبين نظام الحكومه الرقميه في سلطنة عمان

E-Government System

نظام الحكومه الرقمية

These questions will investigate the current situation of available e-Government system established in Sultanate of Oman (e-Oman). How this system is established to suite citizens more along with facilities and efforts associated by government to meet expected performance

هذه الأسئلة للبحث عن حالة نظام الحكومه الرقميه الحالي المؤسس في السلطنه باسم عمان الرقميه وكيف أن النظام تأسس من الأساس ليلائم الشعب من ناحية الخدمات وطريقة طلبها بالبنية التحتيه المناسبه وكيف أن الجهد المبذول يتناسب مع الغرض المتوقع

* 6. E-Government questions **- أسئلة متعلقة بالحكومة الرقمية**

	Strongly Agree أوافق تماما	Agree أوافق	Dis-Agree لا أوافق	Strongly Dis-Agree لا أوافق تماما
By using current e-Government system, my visits to governmental offices reduced إستخدامي لنظام الحكومة الرقمية الحالي قلل من زياراتي لمبنى الحكومة				
By using current e-Government system, I have no problem with the languages been used لا أواجه أي مشاكل متعلقة باللغات المستخدمة في نظام الحكومه الرقمية والمواقع الالكترونية بها				
By using current e-Government system, it is easy to get help in the system in communication Examples call, live chat, Email… etc. طلب المساعده في النظام والموقع الالكتروني سهل ومتعدد مثل المحادثات المباشرة والاتصال والبريد الالكتروني				
Government is giving high support in promoting and put e-Government approach as priority حكومة البلاد تضع مشروع الحكومة الرقمية نصب عينيها وتنشر الوعي لمنتجاته وتدعو الشعب لإستخدامه ويعتبر من الأولويات من بين باقي المشاريع				

	Strongly Agree أوافق تماما	Agree أوافق	Dis-Agree لا أوافق	Strongly Dis-Agree لا أوافق تماما
I have the required resources and equipment in order to Use e-government system like internet, Computer, electricity... Etc. أنا أملك الأجهزة والموارد المناسبه لاستخدام نظام الحكومه الرقميه مثل كمبيوتر, جهاز لوحي, انترنت...الخ	○	○	○	○
Internet cost is reasonable and affordable سعر الانترنت في البلاد مناسب وفي المتناول	○	○	○	○
Internet in my city is reliable for e-government services use خدمة الانترنت في المنطقه التي اعيش فيها تعتبر جيده ويعتمد عليها ومناسبه	○	○	○	○
By using current e-Government system, my governmental tasks became easier باستخدامي لنظام الحكومه الرقميه الحالي سهلت علي الأعمال الحكومية والخدمية	○	○	○	○
By using current e-Government system, governmental tasks take less time than the Manual old system. باستخدامي لنظام الحكومة الرقميه الحالي أصبحت أعمالي تتم بصورة أسرع من النظام السابق	○	○	○	○
By using current e-Government system, no complication or difficulty is associated with its use باستخدامي لنظام الحكومة الرقمية الحالي لا أواجه أي صعوبات أو تعقيدات بها	○	○	○	○
By using current e-Government system, Learning to operate along with dealing with it is easy for me تعلم استخدام والتفاعل مع نظام الحكومه الرقميه الحالي سهل علي	○	○	○	○

	Strongly Agree أوافق تماما	Agree أوافق	Dis-Agree لا أوافق	Strongly Dis-Agree لا أوافق تماما
By using current e-Government system, my productivity increased زادت الإنتاجية في أعمالي الحكومية والخدمية باستخدامي لنظام الحكومة الرقميه الحالي	○	○	○	○
By using current e-Government system, traditional manual errors and mistakes are Reduced. الأخطاء والمشاكل التي كانت متواجدة في النظام القديم للحكومه والخدمات قلت باستخدام نظام الحكومة الرقمية الحالي	○	○	○	○
Overall, I am satisfied with the way the system is currently بشكل عام أنا راضي عن نظام الحكومة الرقمية الحالي	○	○	○	○

Technological intention to use
النية التكنولوجية في الإستخدام

These questions will investigate the current situation of available e-Government system established in Sultanate of Oman (e-Oman). How technology acceptance and fit would enhance and improve citizen's intention to use e-Government system effectively.

هذه الأسئلة للبحث عن حالة نظام الحكومه الرقميه الحالي المؤسس في السلطنه باسم عمان الرقميه وكيف أن تقبل التكنولوجيا ومناسبتها للغرض المنوطه له ستأثر في الفرد المستخدم من ناحية تقبله لإستخدام النظام

*** 7. Technology intention to use questions**

	Strongly Agree أوافق تماما	Agree أوافق	Dis-Agree لا أوافق	Strongly Dis-Agree لا أوافق تماما
By using current e-Government system, it is easier to communicate with government agencies than the old manual system سهل نظام الحكومة الرقمية الحالي من التواصل مع الجهات الحكومية				
By using current e-Government system, it is easier to get information than the old manual system سهل نظام الحكومة الرقمية الحالي الحصول على المعلومات المناسبه والصحيحه				
By using current e-Government system, it is more flexible to interact with service providers than the old manual system سهل نظام الحكومه الرقمية الحالي التواصل والتفاعل مع مزودي الخدمات في البلاد وجعله أكثر مرونه وسلاسه				
Current e-Government system is enhancing tasks effectiveness يزيد نظام الحكومه الرقمية الحالي				

من جودة الأعمال

	Strongly Agree أوافق تماما	Agree أوافق	Dis-Agree لا أوافق	Strongly Dis-Agree لا أوافق تماما
Current e-Government system improves my performance in accomplishing tasks يزيد نظام الحكومه الرقميه الحالي من جودة أدائي الوظيفي وفي استكمال أعمالي	○	○	○	○
By using current e-Government system, I have no problem with personal information privacy لا أواجه أي مشاكل متعلقة بخصوصية وأمان معلوماتي الخاصه باستخدامي لنظام الحكومة الرقمية الحالي	○	○	○	○
I am confident that current e-Government system will perform as expected أنا واثق بأن نظام الحكومه الرقميه الحالي سيكون حسب المتوقع	○	○	○	○
Relying on the provided information in current e-Government system would be risky الإعتماد على نظام الحكومة الرقمية الحالي يعتبر مجازفه وخطر	○	○	○	○
I think that current e - Government system website are secure all the time المواقع الالكترونيه للحكومه الرقميه تعتبر آمنه دائما	○	○	○	○
I think that current e - Government system website have a stable internet access all the time ليست هناك مشاكل متعلقه بالدخول لمواقع الحكومه الرقميه الحاليه من جهة الانترنت ودائما تستطيع دخولها	○	○	○	○
I think that current e - Government system website can be accessed all the time المواقع الالكترونيه للحكومه الرقميه تعتبر متوفره دائما	○	○	○	○

	Strongly Agree أوافق تماما	Agree أوافق	Dis-Agree لا أوافق	Strongly Dis-Agree لا أوافق تماما
I think that current e - Government system website are reliable all the time المواقع الالكترونيه للحكومه الرقميه تعتبر موثوقه ومعتمده دائما	○	○	○	○

Behavioral intention to use
النية السلوكية في الإستخدام

These questions will investigate the current situation of available e-Government system established in Sultanate of Oman (e -Oman). How society enhance and improve citizen's intention to use e-Government system effectively.

هذه الأسئلة للبحث عن حالة نظام الحكومه الرقميه الحالي المؤسس في السلطنه باسم عمان الرقميه وكيف أن البيئة الإجتماعية المحيطة بالفرد ستأثر فيه من ناحية إستخدام النظام

*** 8. Behavioral intention to use questions**

	Strongly Agree أوافق تماما	Agree أوافق	Dis-Agree لا أوافق	Strongly Dis-Agree لا أوافق تماما
I think that the users of e-Government services have more prestige and knowledge أرى أن مستخدمي نظام الحكومه الرقميه يعتبروا أناس ذو هيبه ورقي ومعرفه				
I think that the users of e-Government services have a higher profile than who do not use أرى أن مستخدمي نظام الحكومه الرقميه هم أناس ذو ذكاء وفهم أعلى ممن لا يستخدم				
I think that using e -government services would improve my image أرى أن إستخدامي لنظام الحكومه الرقميه سيحسن صورتي أمام الناس				
I think that using e -government services would improve my style of doing things أرى أن إستخدامي لنظام الحكومه الرقميه سيحسن من أدائي لأعمالي				
My family thinks that using the current e-Government services system is a great idea				

عائلتي ترى أن إستخدام نظام
الحكومه الرقميه هو شيء جيد

	Strongly Agree أوافق تماما	Agree أوافق	Dis-Agree لا أوافق	Strongly Dis-Agree لا أوافق تماما
My friends/colleagues think that using the current e-Government services system is a great idea أصدقائي وزملائي يروا أن إستخدام نظام الحكومه الرقميه هو شيء جيد				
from social I know that using e-Government services system is a great way of doing government services من البيئه المحيطه أعرف أن إستخدام نظام الحكومه الرقميه هو الأفضل لإتمام الخدمات الحكوميه				
I feel very proud to work with the current e-Government system as it is considered the most efficient intra-governmental system to obtain services أفتخر بنفسي في حال أتممت أعمالي الحكوميه بنظام الحكومه الرقميه لانه يعتبر الأنسب لهذا الغرض				
I need to have the required knowledge for using the current e-Government services system أنا أحتاج لإمتلاك المعلومات المناسبه لاستخدام نظام الحكومه الرقميه الحالي				
I need to have the required ability for using the current e-Government services system أنا أحتاج لإمتلاك الكفاءه المناسبه لاستخدام نظام الحكومه الرقميه الحالي				
I think that using the current e-Government services system is a great idea أرى أن إستخدام نظام الحكومه الرقميه هو شيء جيد				

The relationship between Government Operation Excellence and e-Government system in Sultanate of Oman

العلاقة بين التشغيل المتميز للحكومه وبين نظام الحكومه الرقميه في سلطنة عمان

Government Operation Excellence

التشغيل المتميز للحكومه

These questions will investigate the current situation of available e-Government system established in Sultanate of Oman (e -Oman). How this system effecting the operation excellence of government services applying and providing in terms of assurance, tangibles, reliability, responsiveness and empathy

هذه الأسئلة للبحث عن حالة نظام الحكومه الرقميه الحالي المؤسسة في السلطنه باسم عمان الرقميه وكيف أن هذا النظام سيأثرفي التشغيل المتميز للحكومه من ناحية توفير الخدمات والتقديم لها وبالأخص بتقييم الضمان، الملموسات، والموثوقية والتجاوب والتعاطف

*** 9. Government Operation Excellence questions**

أسئلة متعلقة بالتشغيل المتميز للحكومه

	Strongly Agree أوافق تماما	Agree أوافق	Dis-Agree لا أوافق	Strongly Dis-Agree لا أوافق تماما
E-government system has convenient access to different services and inquiries نظام الحكومة الرقمية الحالي به نظام مناسب للرد على الإستفسارات المختلفه	○	○	○	○
E-government employees are with knowledge to answer citizen's questions الموظفون في نظام الحكومة الرقمية الحالي لديهم الخبرة والمعلومات المناسبة للرد على جميع الإستفسارات	○	○	○	○
E-government employees are always courteous الموظفون في نظام الحكومه الرقميه الحالي دائما مهذبون ويتعاملون باحترام	○	○	○	○
E-government system has relevant information resources collection نظام الحكومة الرقمية الحالي به مجموعه متاحة من مصادر المعلومات	○	○	○	○
E-government system has physically comfortable access to system نظام الحكومه الرقميه الحالي هو نظام مريح وسلس في الدخول والتقصي عن المعلومات	○	○	○	○

	Strongly Agree أوافق تماما	Agree أوافق	Dis-Agree لا أوافق	Strongly Dis-Agree لا أوافق تماما
E-government system has Modern and regularly maintained system نظام الحكومه الرقميه الحالي هو نظام متطور و يصان ويطور باستمرار	○	○	○	○
E-government system and staff Make customers feel safe in their transactions نظام الحكومه الرقمية الحالي وموظفيه ينقلوا احساس بالراحة والطمأنينه للمراجعين عند خدمتهم	○	○	○	○
E-government system Provide services as promised نظام الحكومه الرقميه الحالي واثق الخطى يمشي و يوفر الخدمات حسب المخطط	○	○	○	○
E-government system provide services at the promised time نظام الحكومه الرقميه الحالي واثق الخطى يمشي و يوفر الخدمات في وقتها المخطط	○	○	○	○
E-government website delivers the right and wanted services نظام الحكومه الرقميه الحالي يوفر الخدمة المطلوبه من المستخدمين	○	○	○	○
E-government website performs it service accurately نظام الحكومه الرقميه الحالي يقوم بعمله بدقه ويوفر الخدمات الصحيحه	○	○	○	○
E-government system has readiness to respond to customer's request نظام الحكومه الرقميه الحالي متمكن في الرد على أسئلة واستفسارات المراجعين والمستخدمين	○	○	○	○
E-government system has willingness to help user's نظام الحكومه الرقميه الحالي لديه الإرادة لمساعدة المراجعين والمستخدمين	○	○	○	○

	Strongly Agree أوافق تماما	Agree أوافق	Dis-Agree لا أوافق	Strongly Dis-Agree لا أوافق تماما
E-government system has prompt service to citizen's نظام الحكومه الرقميه الحالي يوفر خدمات فورية وسريعه للمراجعين والمستخدمين	○	○	○	○
E-government website tells me what to do if the service cannot be offered نظام الحكومه الرقميه الحالي ينقل للمستخدم متى وكيفية الحصول على الخدمة المرادة إذا كانت غير متاحه له لأي سبب من الأسباب مثل قانون الوزارة	○	○	○	○
E-government staff understand the needs of user's موظفو نظام الحكومه الرقميه الحالي يعرفوا ويفهموا حاجة المستخدم والمراجع	○	○	○	○
E-government employees deal with citizens in a caring fashion موظفو نظام الحكومه الرقميه الحالي يتعاملوا مع المراجع والمستخدم بلباقه واهتمام	○	○	○	○
E-government employees giving users individual attention موظفو نظام الحكومه الرقميه الحالي يتعاملوا مع كل مستخدم او مراجع كحاله منفرده ويعيروه الاهتمام الخاص	○	○	○	○
E-government employees having the users' best interests at heart موظفو نظام الحكومه الرقميه الحالي يعملوا بضمير لخدمة المراجع والمستخدم	○	○	○	○

Thank you for your participation in completing this survey

Muatasim Anwar Ahmed Al Salmi

شكرا جزيلا لمساهمتك في إستكمال الإستبيان

معتصم بن أنور بن أحمد السالمي

APPENDIX 2 MISSING DATA

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q1	552	100	0	0	552	100
Q2	552	100	0	0	552	100
Q3	552	100	0	0	552	100
Q4	552	100	0	0	552	100
Q5	552	100	0	0	552	100
Q6_1	552	100	0	0	552	100
Q6_2	552	100	0	0	552	100
Q6_3	552	100	0	0	552	100
Q6_4	552	100	0	0	552	100
Q6_5	552	100	0	0	552	100
Q6_6	552	100	0	0	552	100
Q6_7	552	100	0	0	552	100
Q6_8	552	100	0	0	552	100
Q6_9	552	100	0	0	552	100
Q6_10	552	100	0	0	552	100
Q6_11	552	100	0	0	552	100
Q6_12	552	100	0	0	552	100
Q6_13	552	100	0	0	552	100
Q6_14	552	100	0	0	552	100
Q7_1	552	100	0	0	552	100

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q7_2	552	100	0	0	552	100
Q7_3	552	100	0	0	552	100
Q7_4	552	100	0	0	552	100
Q7_5	552	100	0	0	552	100
Q7_6	552	100	0	0	552	100
Q7_7	552	100	0	0	552	100
Q7_8	552	100	0	0	552	100
Q7_9	552	100	0	0	552	100
Q7_10	552	100	0	0	552	100
Q7_11	552	100	0	0	552	100
Q7_12	552	100	0	0	552	100
Q8_1	552	100	0	0	552	100
Q8_2	552	100	0	0	552	100
Q8_3	552	100	0	0	552	100
Q8_4	552	100	0	0	552	100
Q8_5	552	100	0	0	552	100
Q8_6	552	100	0	0	552	100
Q8_7	552	100	0	0	552	100
Q8_8	552	100	0	0	552	100
Q8_9	552	100	0	0	552	100
Q8_10	552	100	0	0	552	100
Q8_11	552	100	0	0	552	100

	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q9_1	552	100	0	0	552	100
Q9_2	552	100	0	0	552	100
Q9_3	552	100	0	0	552	100
Q9_4	552	100	0	0	552	100
Q9_5	552	100	0	0	552	100
Q9_6	552	100	0	0	552	100
Q9_7	552	100	0	0	552	100
Q9_8	552	100	0	0	552	100
Q9_9	552	100	0	0	552	100
Q9_10	552	100	0	0	552	100
Q9_11	552	100	0	0	552	100
Q9_12	552	100	0	0	552	100
Q9_13	552	100	0	0	552	100
Q9_14	552	100	0	0	552	100
Q9_15	552	100	0	0	552	100
Q9_16	552	100	0	0	552	100
Q9_17	552	100	0	0	552	100
Q9_18	552	100	0	0	552	100
Q9_19	552	100	0	0	552	100

PPENDIX 3 NORMALITY TEST RESULTS

	N	Mean	SD	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	SE	Statistic	SE
q6_1_1	500	2.50	0.88	0.08	0.11	-0.71	0.22
q6_1_2	500	2.10	0.81	0.49	0.11	-0.12	0.22
q6_1_3	500	2.60	0.87	-0.10	0.11	-0.65	0.22
q6_2_1	500	2.43	0.89	0.19	0.11	-0.69	0.22
q6_2_2	500	1.68	0.76	1.07	0.11	1.03	0.22
q6_2_3	500	3.10	0.89	-0.59	0.11	-0.64	0.22
q6_2_4	500	2.86	0.91	-0.16	0.11	-1.03	0.22
q6_3_1	500	2.44	0.82	0.23	0.11	-0.46	0.22
q6_3_2	500	2.46	0.81	0.19	0.11	-0.46	0.22
q6_3_3	500	2.69	0.74	-0.14	0.11	-0.26	0.22
q6_3_4	500	2.33	0.74	0.35	0.11	-0.06	0.22
q6_4_1	500	2.54	0.77	0.08	0.11	-0.39	0.22
q6_4_2	500	2.44	0.76	0.33	0.11	-0.26	0.22
q6_4_3	500	2.69	0.87	0.00	0.11	-0.81	0.22
q7_1_1	500	2.40	0.82	0.25	0.11	-0.43	0.22
q7_1_2	500	2.27	0.78	0.54	0.11	0.07	0.22
q7_1_3	500	2.45	0.78	0.25	0.11	-0.33	0.22
q7_2_1	500	2.31	0.80	0.35	0.11	-0.23	0.22
q7_2_2	500	2.35	0.81	0.29	0.11	-0.35	0.22
q7_3_1	500	2.33	0.79	0.41	0.11	-0.17	0.22

	N	Mean	SD	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	SE	Statistic	SE
q7_3_2	500	2.38	0.81	0.31	0.11	-0.35	0.22
q7_3_3	500	2.82	0.80	-0.55	0.11	0.04	0.22
q7_4_1	500	2.46	0.74	0.24	0.11	-0.24	0.22
q7_4_2	500	2.50	0.80	0.27	0.11	-0.47	0.22
q7_4_3	500	2.49	0.77	0.19	0.11	-0.36	0.22
q7_4_4	500	2.33	0.75	0.39	0.11	-0.05	0.22
q8_1_1	500	2.29	0.76	0.36	0.11	-0.07	0.22
q8_1_2	500	2.45	0.75	-0.05	0.11	-0.33	0.22
q8_1_3	500	2.41	0.78	0.17	0.11	-0.34	0.22
q8_1_4	500	1.96	0.66	0.88	0.11	2.05	0.22
q8_2_1	500	1.99	0.68	0.79	0.11	1.55	0.22
q8_2_2	500	1.94	0.67	0.76	0.11	1.57	0.22
q8_2_3	500	1.94	0.74	0.81	0.11	0.99	0.22
q8_2_4	500	1.87	0.76	0.80	0.11	0.68	0.22
q8_3_1	500	1.90	0.70	0.63	0.11	0.72	0.22
q8_3_2	500	2.17	0.77	0.23	0.11	-0.35	0.22
q8_3_3	500	1.74	0.70	0.90	0.11	1.25	0.22
q9_1_1	500	2.61	0.79	-0.01	0.11	-0.47	0.22
q9_1_2	500	2.61	0.78	0.03	0.11	-0.45	0.22
q9_1_3	500	2.29	0.74	0.63	0.11	0.31	0.22
q9_2_1	500	2.40	0.73	0.41	0.11	-0.07	0.22
q9_2_2	500	2.44	0.77	0.18	0.11	-0.33	0.22
q9_2_3	500	2.44	0.78	0.21	0.11	-0.36	0.22

	N	Mean	SD	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	SE	Statistic	SE
q9_2_4	500	2.45	0.77	0.27	0.11	-0.31	0.22
q9_3_1	500	2.55	0.77	0.17	0.11	-0.42	0.22
q9_3_2	500	2.61	0.78	0.04	0.11	-0.45	0.22
q9_3_3	500	2.51	0.78	0.30	0.11	-0.41	0.22
q9_3_4	500	2.46	0.75	0.40	0.11	-0.23	0.22
q9_4_1	500	2.58	0.75	0.01	0.11	-0.36	0.22
q9_4_2	500	2.45	0.75	0.34	0.11	-0.23	0.22
q9_4_3	500	2.53	0.74	0.20	0.11	-0.34	0.22
q9_4_4	500	2.54	0.76	0.22	0.11	-0.40	0.22
q9_5_1	500	2.52	0.74	0.36	0.11	-0.33	0.22
Q9_5_2	500	2.42	0.74	0.50	0.11	-0.09	0.22
Q9_5_3	500	2.57	0.76	0.17	0.11	-0.41	0.22
Q9_5_4	500	2.48	0.75	0.38	0.11	-0.29	0.22

APPENDIX 4 PUBLICATIONS AND CONFERENCES

ARTICLES

Challenges in Successful e-Government Development: A review on Sultanate of Oman, 2015, IJSRP, Malaysia, Vol. 05, Issue, 12, P 157-162, http://www.ijsrp.org/research-paper-1215.php?rp=P484879

E-Government Contributions and Advantages: A review of Sultanate of Oman, 2015, IJSRP, Malaysia, Vol. 05, Issue, 12, P 214-219, http://www.ijsrp.org/research-paper-1215.php?rp=P484890

E-Government definitions: A Discussion about different point of views and its impact, 2015, IJMRD, UUM, Malaysia, Vol. 02, Issue, 11, P 425-427, http://www.allsubjectjournal.com/search?q=muatasim

M-Government adoption and diffusion: A case study of sultanate of Oman, 2015, IJMRD, Malaysia, Vol. 02, Issue, 11, P 418-424, http://www.allsubjectjournal.com/search?q=muatasim

The relationship between government operation excellence and e-government system in sultanate of Oman, 2015, IJMRD, Malaysia, Vol. 02, Issue, 11, P 309-317, http://www.allsubjectjournal.com/search?q=muatasim

SWOT and TOWS matrix e-Government analysis review on Sultanate of Oman, 2015, Macro think Institute, Malaysia, Vol. 05, Issue, 04, P 13-23, http://www.macrothink.org/journal/index.php/ijld/article/view/8641

E-Government analysis Sultanate of Oman Case, 2016, IJSTA, UUM Malaysia, Vol. 02, Issue, 01, P 1-8, http://www.ijsta.com/papers/ijstav2n1y16/IJSTA-V2N1R2Y16.pdf

E-Government Citizens Behavior analysis in intention to use Sultanate of Oman Case, 2016, APJSS, Malaysia, Vol. 04, Issue, 01, P 1-11, http://www.annalsofeducation.com/current.html

Government Operation Excellence Sultanate of Oman Case, 2016, IJIAR, UUM Malaysia, Vol. 01, Issue, 01, P 15-34, http://journalijiar.com/current-issue/

E-Government Technology Acceptance analysis of Citizens Sultanate of Oman Case, 2016, IJSRC, Malaysia, Vol. 04, Issue, 01, P 13-26, http://ijournals.in/ijsrc/wp-content/uploads/2016/02/3.4110-Mutasem.compressed.pdf

Novelty dimension overview in tourist satisfaction: GCC Case, 2016, IJSR, Malaysia, Vol. 05, Issue, 02, P 212-215, ijsr.net/archive/v5i2/NOV161120.pdf

Condition dimension overview in tourist satisfaction: GCC Case, IJIR, Malaysia, Vol. 02, Issue, 03, P 453-457, http://www.onlinejournal.in/v2i32016/

Successful e-Government Case study of Sultanate of Oman, 2016, IJMRD, Malaysia, Vol. 03, Issue, 03, P 312-318, http://www.allsubjectjournal.com/archives/download?id=2058&refnum=3-3-87

Relationship between e-government and e-tourism, 2016, IJSRP, Malaysia, Vol. 06, Issue, 04, P 215-217, *www.ijsrp.org/research-paper-0416.php?rp=P525249*

Uniqueness in Tourism Satisfaction, 2016, IJENS, Malaysia, Vol. 16, issue 01, P 21-24, http://ijens.org/IJBAS%20Vol%2016%20Issue%2001.html

CONFERENCES

E-Government analysis Sultanate of Oman Case, EBM, 5-7 Mar 2016, Beijing, China, The 7th *International Conference* on Engineering and Business Management (EBM-2016)

Factors Contributing to the Implementation of e-Government in Sultanate of Oman, ICMC, 20-21 Aug 2016, Melaka, Malaysia, 1st International Conference on Management and Communication (ICMC-2016)