A FRAMEWORK TO STUDY FACTORS INFLUENCING THE ACCEPTANCE OF INFORMATION TECHNOLOGY IN YEMEN GOVERNMENT

By

SAMI MOHAMMED SALEH AL HADERI

Thesis submitted to
Othman Yeop Abdullah Graduate School of Business
Universiti Utara Malaysia
In Fulfillment of the Requirement for the Degree of Doctor of Philosophy

PERMISSION TO USE

In presenting this thesis in fulfilment of the requirement for the degree of Doctor of Philosophy from Universiti Utara Malaysia, I agree that the university library may make it freely available for inspection. I further agree that permission for copying this thesis in any manner, in whole or in part, for the scholarly purposes may be granted by my supervisor, Associate Professor Dr. Hj Hamzah B. Abd.Rahman, The Director of the Executive Development Center, or in his absence, the Dean of Othman Yeop Abdullah, Graduate School of Business. It is also understood that any copying or publication or use of this thesis or part thereof for financial gain shall not be allowed without any written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from this thesis.

Request for permission to copy or to make other use of material in this thesis, in whole or in part, should be addressed to:

Dean of Othman Yeop Abdullah
Graduate School of Business
Universiti Utara Malaysia
06010 UUM Sintok
Kedah Darul Aman
Malaysia

ABSTRACT

Organizations around the world are looking for the development and keep up to date with emerging technology. Thus, they pay more intention to develop their technology infrastructure to improve productivity, effectiveness, or to adopt e-government. However, in reality, not all companies adopt and use effectively, or even use, information technology. And in reality, not all employees in organizations accept, adopt, and use effectively, or even use, information technology. When this happens, there is a gap between the ideal and the reality of the actual usage of information technology. As a result, there is need to study and understand the factors affecting the acceptance of technologies. This study aims to test the success of the technology acceptance model in Yemen culture. In addition, This study aims to investigate the factors influencing the acceptance of technology in Yemen public sector. This study developed a framework based on two theories, TAM 2 and UTAUT. In addition, the study added two important factors of organization culture and government support to the key factors in the theory of technology acceptance in order to provide better understanding for the factors influencing the acceptance of information technology among the individual perceptions. survey questionnaire was distributed to 53 government utilities and 357 cases were used in the analysis. Structural Equition Modeling AMOS 18 was used for the analysis of the proposed model, from a total 14 hypothesis, 11 were supported and three hypothesis were rejected. This study provided empirical evidence for the effects of new technology determinants in the government sector. In particular, it has successfully revealed that organization culture, government support, subjective norm, top management support and information quality are important determinants in influencing the adoption of technologies. The findings confirmed the theory of TAM and showed its potential capability in the Middle East, particularly in Yemen.

Keywords: Technology Acceptance Model, National Culture, Government Sector, Structural Equition Modeling, Yemen.

ABSTRAK

Organisasi di seluruh dunia mengawasi dan berusaha untuk pembangunan dengan kemunculan teknologi baru. Oleh itu, mereka memberi lebih tumpuan membangunkan infrastruktur teknologi untuk meningkatkan produktiviti, keberkesanan atau untuk menerima pakai e-kerajaan. Walau bagaimanapun, pada hakikatnya, tidak semua syarikat menerima pakai dan menggunakan secara berkesan atau pun menggunakan teknologi maklumat. Pada hakikatnya, tidak semua pekerja dalam organisasi menerima, menerima pakai, dan menggunakan dengan berkesan, atau pun menggunakan, teknologi maklumat. Apabila ini berlaku, wujudlah jurang antara ideal dan realiti sebenar penggunaan teknologi maklumat. Oleh itu terdapat keperluan untuk mengkaji dan memahami faktor-faktor yang mempengaruhi penerimaan teknologi. Kajian ini bertujuan untuk menguji kejayaan model penerimaan teknologi dalam budaya Yaman. Di samping itu, kajian ini bertujuan untuk mengkaji faktor-faktor yang mempengaruhi penerimaan teknologi di sektor awam Yaman. Selain itu, kajian ini membangunkan satu rangka kerja yang berdasarkan dua teori; TAM 2 dan UTAUT. Di samping itu, kajian ini bertujuan untuk mengkaji faktor-faktor yang mempengaruhi penerimaan teknologi di sektor awam Yaman. Kajian ini juga menambah dua faktor penting iaitu budaya organisasi dan sokongan kerajaan kepada faktor-faktor utama dalam teori penerimaan teknologi untuk memberi kefahaman yang lebih baik tentang faktor-faktor yang mempengaruhi penerimaan teknologi maklumat dalam kalangan persepsi individu. Satu soal selidik telah diedarkan kepada 53 utiliti kerajaan dan 357 kes telah digunakan dalam analisis kajian. Structural Equition Modeling AMOS 18 telah digunakan untuk analisis model yang dicadangkan; daripada 14 hipotesis, 11 hipotesis telah disokong, dan tiga hipotesis ditolak. Secara khususnya, kajian ini telah berjaya mendedahkan bahawa budaya organisasi, sokongan kerajaan, norma subjektif, sokongan pengurusan atasan, dan kualiti maklumat adalah penentu penting dalam mempengaruhi penggunaan teknologi. Dapatan kajian ini mengesahkan teori TAM dan menunjukkan keupayaan potensi di Timur Tengah, khususnya di Yaman.

Kata kunci: Model Penerimaan Teknologi, Kebudayaan Kebangsaan, Sektor Kerajaan Structural Equition Modeling , Yaman

ACKNOWLEDGMENT

I would like to express my Thankful for the Ministry of High Education in the Republic of Yemen for giving may the opportunity to conduct this study in lovely country the kingdom of Malaysia. Also, I would like to express my sincere to the Mister of The Ministry of technology Mr. Kamal AL-jabri and the Yemen telecommunication corporation for supporting me by approving the education holiday during the period of the study.

Also, I would like to express my grateful and appreciation for my wife and my 3 children Moataz, Sohail and Nisma for all the patient and support they gave it to me. Also, all the grateful for my brother Mr. Mohamed AL Haderi for everything he did for me to finish my study.

All the thanks and appreciation to Assoc. Prof. Dr. Razli Che Razak and Dr. Faridahwati Binti Mohd Shamsudin for the directions and advices. Moreover, all the thanks and appreciation to Dr. Zainol Bidin for the directions and advices.

In addition, I would like to express my sincere gratitude and appreciation for Associate professor Dr. HJ Hamzah B. Abdrahman, Director of the Executive Development Center, my supervisor for his supervision, valuable directions, encouragement and the understanding during the processes of my thesis.

TABLE OF CONTENTS

LIST OF THE TABLES

LIST OF THE FIGURES

LIST OF ABBREVIATION

IT	Information technology
YR	The Yemeni Rial
CIA	The Central Intelligence Agency
ICT	Information and communication technology
USA	United state of america
PC	Personal Computer
UTAUT	Unified theory of acceptance and use of technology
TAM	Technology Acceptance Model
BEA	Bureau of Economic Analysis
OCAM	Office, Computing and Accounting machinery
IPE	Information Processing Equipment
ERP	Enterprise resource planning
CSE	Computer self-efficacy
GCSE	General computer self-efficacy
SCSE	Syestem computer self-efficacy
IS	Inforamation system
EMR	Electronic Medical Record System
SN	Subjective norm
WebCT	Web communicate technology
POLNET	police office interanet
TPB	Theory of planned behavior
TRA	Theory of reasoned action
TMS	Top management support
UNESCO	United Nations educational, Scientific and Cultural organization
CEO	Chief executive officer

SEM	Structural Equation Modeling
AMOS	Aviation maintenance, repair, and operations system
GLS	Generalized list square
OLS	Ordinary list square
MDIL	Maximum likelihood
DF	Degree of freedom
Sig	Significant
KMO	Kaiser-Meyer-Olkin Measure of Sampling Adequacy
AVE	Average Variance Extracted
X^2/df	Minimum Discrepancy **CMIN** / Degree Of Freedom **DF**)
GFI	Goodness of Fit
AGFI	Adjusted Goodness of Fit index
NFI	Normed Fit Index
TLI	The Tucker-Lewis index
RFI	The relative fit index
RMSEA	Root Mean Square Error of Approximation
Cult8	Culture 8
Cult15	Culture 15
Cult17	Culture 17
Cult23	Culture 23
Cult25	Culture 25
Cult28	Culture 28
Top1	Top management support 1
Top2	Top management support 2
Top4	Top management support 4
Top6	Top management support 6
Top7	Top management support 7

Gov2	Government support 2
Gov3	government support 3
Gov6	Government support 6
Gov7	Government support 7
Effic4	Self-efficacy 4
Effic5	Self-efficacy 5
Iqua4	Information quality 4
Iqua6	Iinformation quality 6
NNFI	Non-Normed Fit Index
NFI	Normed Fit Index
RMR	Root Mean Square Residual
ECVI	The expected cross-validation index
p	probibility
Y	Estimated value
T-value	Test value
EASE	Ease of use
Useful	Usefulness
Intention	Intention behavior to use
BI	Intention behavior to use
Norm’s	Subjective norm
Quality	Information quality

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Countries and governments try to develop and extend their business and economies throughout the world by building relations and agreements. Enhancing trade relations between countries and governments is possible with the application of information technology. The spread of information technology (IT) across the globe is unstoppable because of the benefits it offers. Many organizations are willing to invest huge sums of money on information technology to support different strategic and operational objectives for the purpose of gaining competitive advantage (Venkatesh, Morris, Davis, & Davis, 2003).

From the government point of view, the advent of IT is beneficial as it does not only allow ease of communication with the rest of the world, but it also enables the government to offer better quality services to the general public. The use of IT in government agencies marks the establishment of e-government. But unfortunately, acquiring appropriate IT is not a sufficient condition for utilizing it effectively. Equally important is the acceptance of the government employees of the new technology (Traunmuller & Lenk, 2002).

Whilst the benefits of IT applications have been well documented such as it could reduce costs of obtaining, processing, and transmitting information (Traunmuller & Lenk, 2002), it may not always be readily accepted by employees in the organization. It has been reported that some employees in organizations do not use IT effectively, or in some cases, they do not use it at all despite the investment made in IT. When this happens, the investment made did not yield the expected return. Hence, the IS practitioners and the management are under pressure to determine the factors or the motivators for IT usage and the acceptance of individuals of IT usage in order to reduce the cost and attain the maximum return of the investment in IT (Dadayan & Ferro, 2005; Lopez-Fernandez, Rodriguez-Illera, 2008; Rivard, Raymond, & Verreault, 2006).

In order for the organizations to realize the full benefits of the application of IT, it is important for those who have to use the technology to accept it (Bouwman, hooff, Wijngaert, dijk, 2002). Knowing what makes employees accept or resist to some technology is important so that the investment made on the IT application yields a good and satisfactory return. Hence, this study attempted to examine the factors that influence information technology acceptance in the public sector in the Republic of Yemen. The study also aimed to highlight the role of information technology strategies in facilitating information transaction between top management and government. Finally, this study examined the government support of IT adoption towards the establishment of e-government.

1.1 Background of Republic of Yemen

The Republic of Yemen is an Arab country located in the southern part of the Arabian Peninsula. It is bordered on the north by Saudi Arabia and by the Arab Sea. Oman and the Red Sea lie to the west of the Republic of Yemen. The total area of the Republic of Yemen is about 555,000 square kilometers, and its population is 18 million as at 2009. The official language of the country is Arabic and Islam is the official religion. The ethnic groups are predominantly Arab, but also Afro-Arabs, South Asians, and Europeans. The Yemeni Rial (YR) is the official currency unit.

The Republic of Yemen has three national independence days: (1) September 26, 1962 - when the king of Northern Yemen, at that time, was overthrown and the country was proclaimed a republic instead of a kingdom; (2) November 30, 1967 - when the southern part of the country, at that time, became independent from the United Kingdom; and (3) the Unification Day on May 22, 1990 - when the Republic of Yemen was established by the merger of Southern Republic of Yemen and Northern Republic of Yemen.

The legal system of the Republic of Yemen is based on Islamic law, Turkish law, English common law, and local tribal customary law. The Republic of Yemen is one of the poorest countries in the Arab World. It has reported a strong growth since 2000, and its economic fortunes depend mostly on oil (CIA - The Central Intelligence Agency, 2005).

Since the unification of the Republic of Yemen in 1990, the president was determined to establish a new way of governance. The government represented by the President initiated a plan to develop the new country's infrastructure and build a democratic administrative system, which is responsible for the provision of public services to all Yemenis whether in the country or abroad. Since 1990, the Republic of Yemen has been trying to pursue a clear social strategy for developing new sources of income for its people, find new ways of investment in the country, reform the government, and establish new private sector participation to enhance the economical growth of the country (Ministry of Civil, Republic of Yemen, 2008). The main objective of the government now is to improve the efficiency of the governmental administrative capabilities for better and improved services.

The Republic of Yemen's long-term's strategy is aimed at developing a reliable and efficient administration and government by improving and reforming its ministries and institutions to deliver better public services for all its citizens and gain recognition around the world. However, not all goals aimed at improving the governmental functions were achieved. There are still problems facing the government plan to reform like, inflated bureaucracy, lack of collaboration between ministries and agencies, illiteracy, and a lack of direct vision of the future of the country (Alsohybe, 2007). In its attempt to overcome these problems, the government of the Republic of Yemen has launched a reform project using information technology to implement e-government in the next couple of years. The implementation of information technology will lead to collaboration between governmental agencies and lead to integrated databases that can be accessed by any agency any time thus delivering rapid and efficient service to the public (Alsohybe, 2007).

The National Information Center of the Republic of Yemen submitted a report to the Republic of Yemen's Presidential Office and to the Shura Council on June 2005 as part of a workshop entitled "e-government between reality and expected goals in the Republic of Yemen" (Alsohybe, 2007). The report indicates that in terms of use of information and communication technology (ICT), the Republic of Yemen lags far behind developed countries like the USA and Canada and developing countries like Malaysia. It even fares significantly lower than the world or even the Arab standard (see Table 1.1). As such, it is not surprising to see that e-government readiness is also very low (see Table 1.2) in terms of web measurement, communication, human resources, general indicator, and hence international ranking.

The statistics show that the Republic of Yemen is facing a big challenge in the implementation and use of ICT in the country, and hence in bringing the country forward.

Table 1.1
Comparison between the Republic of Yemen and Selected Countries in terms of Computer Ownership and Internet Usage per 100 People

Country	PC Ownership (%)	Internet Usage (%)
The World	7.47	15.47
Arab World	2.04	5.57
USA	65.89	55.14
Canada	48.7	51.28
Malaysia	14.68	31.97
Egypt	1.66	2.82
Yemen	.79	.51

Source: Alsohybe (2007)

Table 1.2
E-government Readiness in Selected Countries

Country	Web measurement	Communications	Human resources	General indicator	International ranking
USA	1.00	.077	.097	.0913	1
Canada	.873	.668	.970	.837	7
Malaysia	.49	.302	.830	.541	42
Egypt	.100	.066	.630	.265	136
Yemen	.054	.040	.490	.195	154

Source: Alsohybe (2007)

1.2 Problem Statement

It is expected that companies adopt and use information technology effectively toward the accomplishment of their organizational objectives because of its purported benefits. However, in reality, not all companies adopt and use effectively, or even use, information technology (Markus & Tanis, 2000). The researcher agrees there is a gap between the ideal and the reality of the actual usage of information technology in many organizations (Markus & Tanis, 2000).

Since there is lack of study reveals on the area, many researchers in the field of information technology and information system support the necessity to study the factors affecting IT acceptance and its relation to employee performance. For example, Venkatesh, Morris, Davis, and Davis (2003) compared eight models of IT usage and validated a new theory named the unified model or UTAUT. The study recommended that future research should test further the new model called UTAUT in an attempt to provide an even richer understanding of technology adoption and usage behavior by considering several underlying influential mechanisms such as computer literacy, social or cultural background, systems characteristics, self-efficacy, and technology fit. They also recommended that future studies be undertaken to confirm the model among different user groups, individuals in different functional areas and other organizational contexts (public or government institutions).

In Saudi Arabia, the technology acceptance theory was discussed by (Al-Gahtani, 2004). The study recommended that more studies in the technology acceptance theory. Al-Gahtani highlighted the further research should focus on the influences of the social and cultural factors on the technology acceptance. The researcher also suggested the research should use different methodologies in order to really understand the relationship of the key variables to the technology acceptance. Other proponent, (Gorke, 2006) also made similar recommendation for further research in IT, in which the determination of factors influencing the decision to use any systems, whether the existing or new system is necessary. Other context also showed the importance of this area, for example, in a Turkish study amongst police officers, (Yalcinkaya, 2007) recommended to consider other possible psychosocial or contextual variables that may affect behavioral intention of information technology usage. Considering the previous studies on this area, the current researcher identified what we need to know in order to understand the subject matter .

Study needs to investigate the different context of the technology acceptance such as in different countries like in Yemen, and different sectors such as in public organizations. (Almutairi, 2007) applied the technology acceptance model TAM in Kuwait. Therefore, it is useful for the current research to validate its applicability in different cultural contexts. Furthermore, the human belief in IT is also important for the current study because many studies such as Loo, Yeow, and Chong (2009), and Kim, Lee, and Law (2007) included other factors such as quality of IT, perceived value, and users' acceptance of the IS. Furthermore, the study in hotel (e.g. Loo et al. 2009) expected to disclose different results compared to the current research context in public organizations (Smith ,2008).

In addition, little evidence on the individual level analysis in the previous studies, whereby had been concluded by (Agarwal, 2000) in his study. He further highlighted the importance of individual differences as a significant theoretical construct in technology acceptance is indisputable. He further recommended that future studies consider the role of training and learning culture as he argues these interventions could possibly facilitate technology acceptance.

According to al-Jabri, who is to the Minister of Information Technology (personal communication, March 15, 2007), currently in Yemen, the usage of information technology is 10% from the overall system capability, and this is below expectation. So, there is a need to investigate the reasons which inhibit organizations from getting the maximum usage of the system, according to the Minister of Information Technology and the Vice General Manager of the Public Telecommunication Corporation in Yemen PTC .

Following the call by the Minister of IT and the theoretical gaps above, a study was conducted to find empirical support for the model of technology acceptance TAM2 and the unified theory of acceptance and use of technology UTAUT within the public sector, to examine technology acceptance and utilization issues among public employees to improve the success of IS implementation in this arena, and to explore the government role in supporting the adoption of information technology within the public utilities employees either as a strategy or as logistic support. Additionally, there is a need to examine the role of information technology strategy in controlling the factors that influence technology acceptance for the purpose of developing and improving employee’s performance (Alsohybe, 2007).

This leads to an investigation into the factors of individual characteristics such as self-efficacy, system characteristics such as information quality, social characteristics such as subjective norms and organization culture and institutional characteristics such as top management support and government support that could possibly affect the use or adoption of such technology.

This study used the technology acceptance TAM2 to confirm the important indicators of technology acceptance such as beliefs (perceived ease of use and perceived usefulness) and social influences such as subjective norms. The study chose TAM2 due to shortcoming in the technology acceptance model TAM1 which did not consider the effect of social influence. However, the present study combined technology acceptance model TAM2 with the unified theory of acceptance and use of technology (UTAUT) to provide better explanation of the effect of culture on technology acceptance and to overcome the shortcoming in TAM2, which does not consider the effect of social influence such as culture (Venkatesh, Morris, Davis, Davis, 2003).

1.3 Research Objectives

the present study was generally carried out to examine the technology acceptance and utilization issues among public employees in order to improve the success of IS acceptance and implementation. Specifically, it intended to achieve the following objectives:

1. To investigate the extent of which technology acceptance model (TAM2) and the unified theory of acceptance and use of technology (UTAUT) explain the intention to use the information technology among the government employees in the Republic of Yemen.

2. To examine the effect of individual differences such as self-efficacy on the acceptance of new technology among employees in the public sector.

3. To examine the effect of system features such as information quality on the acceptance of technology.

4. To examine the effect of social factors such as subjective norm and organization culture on the acceptance of new technology among employees in the public sector.

5. To examine the effect such as institutional factors top management support and government support on the acceptance of new technology among employees in the public sector.

1.4 Research Questions

Following the above questions, The above discussion raises a number of research questions as follows:

1. To what extent technology acceptance model (TAM2) and the unified theory of acceptance and use of technology (UTAUT) could explain the intention to use the information technology among government employees in the Republic of Yemen?

2. Do individual differences such as self-efficacy affect the acceptance of new technology among employees in the public sector?

3. Do system features of information quality affect the acceptance of new technology?

4. To what extent social factors such as subjective norm and organization culture influence the acceptance of new technology among employees in the public sector?

5. Are there any effects of institutional factors such as top management support and government support on the acceptance of new technology among employees in the public sector?

1.5 Scope of Study

Following the call by the Minister of IT in the Republic of Yemen and the theoretical gaps above, and according to the preliminary data collection (group discussion) in the public sector in yemen to define the probem more specifically and delineating the possible variables that might exert an influence, a study was conducted in the public sector in the Republic of Yemen amongst managers and employees in government agencies and departments. Questionnaires were used as the main data collection technique. The data collection period lasted for three months, from September 1 until December 30, 2010.

1.6 Significance of Study

In his study that aimed to delineate IT differences between the public and private sectors, (Smith, 2008) found the private sector is using information technology more than the public sector due to many reasons, one of them is individual differences, the necessity for competitive advantage and improve the organization performance and productivity to achieve profit. The present study contributes to the existing knowledge by examining the acceptance and implementation of information technology among individuals in the public sector.

The inclusion of social influence such as organization culture as a factor that could possibly influence technology acceptance. In a very conservative and traditional society like the Republic of Yemen society where culture and religion dominate the way people live and perceive changes around them, an empirical study can enhance our theoretical understanding on the effect of organization culture on the people's acceptance or resentment of such technology.

With the inclusion of culture, the present study is different from previous studies in that it integrated all determinants of technology acceptance previously identified. These four different general categorical factors are self-efficacy, information quality, subjective norms, organization culture, top management support, and government support. They were taken into account in the present study because of the purported differential effect each variable has on the acceptance of the technology (Venkatesh, Morris, Davis, & Davis, 2003).

The present study is also important for practical reasons. Practically speaking, the findings of the present study could be of use to managers and practitioners on how to reduce and minimize the likelihood of resistance or refusal of employees in adopting and using the information technology at work. Relevant measures could be taken once the factors that contribute to the problem of acceptance are identified.

1.7 Organization of Thesis

This thesis consists of five chapters. The first chapter offers background of the problem, the problem statement, the research questions, the research objectives, the scope of the study, and the significance of the study. The second chapter introduces the Republic of Yemen, the importance of information technology, the advantages and disadvantages of adopting information technology, background of the new information system, the literature review, the theories used in this model, and the research framework.

The third chapter is about research design and methodology. Generally, it explains how the present study was practically carried out. Specific issues related to research method such as sampling, data collection, pilot study, instrumentation, and data are discussed.

Chapter four presents the results of the study based on the statistical tests run to test the hypotheses. It also presents some descriptive findings of the data collected. Specifically structural equation modeling was used to test the hypotheses. Finally, chapter five discusses in detail the findings, the limitations of the study, and recommendations for future research and practice. Some concluding remarks are also offered.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The previous chapter has highlighted the need to study the issue of technology acceptance by discussing the gaps in the existing literature. In particular, it has explained why a study to examine the determinants of technology acceptance such as the factors of individual characteristics such as self-efficacy, system characteristics such as information quality, social characteristics such as subjective norms and organization culture and institutional characteristics such as top management support and government support that could possibly affect the use or adoption of such technology. In this chapter, a discussion on the relevant literatures pertaining to technology acceptance and use is offered to facilitate the development of the research model and hypotheses.

2.1 Importance of the Information Technology (IT)

Rapid advanced scientific and technological innovations, economic turbulence and uncertainty are some factors that underlie the importance of IT investment. IT enables organizations to have the capabilities to do some adaptations proactively. Hence, IT becomes an integral part, even a pivotal part of business activities and processes undertaken by any organization (Chau& Hu, 2002). Accordingly, a question rises about the necessity to invest in IT in order for the organizations to reap the benefits of IT adoption and to ensure the adoption success. Agarwal and Karahanna (2000) argue that the success in this investment is valuable when IT is utilized by the intended user in a way that it contributes to the strategy and the operational goals of the organization. Therefore, user acceptance of IT is fundamental for the success of IT investment.

The importance of technology comes from the fact that technology has an important impact on innovation and the development of societies and economies. This impact can be observed in three ways. The first is substitution, as new technology substitutes the old. For example, consumers start substituting their fixed telephone lines with mobile telephones. The second is diffusion. Adopting new technology widely across society is cost-effective due to its superiority to the previous technology. The final one is transformation. New technological ways start working and emerging because consequent new technology is diffused widely in society. For example, the widespread adoption of networking has led to interesting innovations in the communication patterns of individuals such as executives conducting business while waiting in airport lounges or traveling in trains (Mia, Dutta, 2007-2008).

Information and communication technology (ICT) offers more opportunities for economic development and plays a very important role in international competitiveness, rapid economic change, and productive capacity of improvements for developing countries. ICTs offer the developing countries many opportunities, as it has done in the developed world when it created unprecedented possibilities for them. Studies have emphasized that there is evidence of a strong linkage between GDP growth and ICT investment showing the importance of ICT investment for development Seo, Lee, Oh, (2009).

Acquiring IT to support business needs is clearly a crucial prerequisite to exploiting the potential of IT. Unfortunately acquiring appropriate IT is a necessary but not a sufficient condition for utilizing it effectively. Organizations (i.e. leaders and managers) make primary adoption decisions, yet it is individuals within the firm who are the ultimate users and consumers of IT. Thus, it is evident that true business value from any IT would derive only through appropriate use by its target user group. In other words, systems that are not utilized will not deliver the returns anticipated by managers. Evidence suggests that individual users can exhibit a variety of different behaviors when confronted with a new IT: they may completely reject it and engage in sabotage or active resistance, they may only partially utilize its functionality, or they may wholeheartedly embrace the technology and the opportunities it offers (Agarwal, 2000). Obviously, each behavior has some consequential outcomes both negative and positive for managers (Robey, Boudreau, 1999).

Also, organizations have increased their investment in IT to increase the efficiency of their business processes, support management decision making and improve productivity. So IT becomes an important tool in attaining competitive advantage for the organization and improves employees' productivity and efficiency (Kim, Lee, & Law, 2007). Many studies have investigated the relation between IT investment and increased productivity and the performance of the companies. One of these studies was conducted by Sircar et al., (2000) who found that several organizations managed to report success after investing in IT.

Agarwal and Karahanna (2000) argue that IT investment will be successful when IT is utilized by the organization's intended user in the way that it contributes to the strategy and the goals of the firms. Thus user acceptance is the key for a successful IT investment (Darsono, 2005). It is interesting to note that for more than two decades, IT has been the focus for researchers as it is considered the key to leading the organization to good performance.

In addition, the operations of Small and Medium Sized Enterprises (SME) considerd impossible without the help of information technology, and it is essential for encouraging the development of SME which it plays an important role for promoting social development and economic by creating opportunities for employment (Berisha-Namani, 2009).

Finally, globalization of world economy and technological developments in the two decades of twentieth centry have transformed the majority of wealth creating work from physically based to knowledge based and has greately enhanced the values of information to business organisation by offering new business opportunities. While, for the last two hundred years, economics has recognised only two factors of production: labour and capital, this is know changing. Information and knowledge are replacing capital and energy as the primary wealth creating assests. Information has become a critical resource, a priceless product and basic input to progress and development. Information has become synonymus with power. Therefore, accurate, rapid and relevant information areconsidered to be essential for SME (Namani, 2009).

2.2 Advantages and Disadvantages of Adopting IT

2.2.1 Advantages

The following explains some of the main advantages of IT adoption by organizations.

1. IT is used to support the competitive strategy of a company by reducing costs of production and maintenance of the company's activities. For example, IT facilitates the work of employees and enables them to be more creative in their work (Rackoff, Wiseman, Ullrich, 1985).

2. By using IT, the organization or the companies will be able to develop the value of its business throughout by giving more focus to customers. IT enables the organization to keep track of its customer preferences and supply them with products and services anytime anywhere by using the Internet, Intranet and Extranet (e-commerce websites) (Brien et al, 2008).

3. Many companies use IT and Internet to reengineer their business processes because IT can help integrate work towards achieving the goal of the organization by improving the design of the work flows or the requirements of the job (Attaran, 2004).

4. IT provides the communication and the information required for managers in order to manage the different activities within the organization and to manage the resources from the partners as well as to take advantage of the changes in the market environment (Mora, Winograd, Flores, Flores, 1993).

5. IT can support the organization's competitive strategy by making the organization a knowledge creator of innovation or by doing similar things to what other companies are doing with regards to use of Internet (Brien & Maracas, 2008).

2.2.2 Disadvantages

Some disadvantages of IT include:

1. Unemployment - While IT may have streamlined the business process it has also created job redundancies, downsizing and outsourcing. This means that a lot of lower and middle level jobs have been done away by causing more people to become unemployed.

2. Privacy - Though IT may have made communication quicker, easier and more convenient, it has also brought along privacy issues. From cell phone signal interceptions to email hacking, people are now worried about their once private information becoming public knowledge (http://www.smallbusinessbible.org/advan_disadvan_informationtechnology.html # 3/4/2009).

3. Lack of job security - Industry experts believe that Internet has made job security a big issue since technology keeps on changing each day. This means that one has to be in a constant learning mode, if he or she wishes for their job to be secured (http://www.smallbusinessbible.org/advan_disadvan_informationtechnology.html # 3/4/2009).

4. Dominant culture - While IT may have made the world a global village, it has also contributed to one culture dominating the weaker one. For example, it is now argued that US influences how most young teenagers all over the world now act, dress and behave. Languages too have become overshadowed, with English becoming the primary mode of communication for business and everything else (http://www.smallbusinessbible.org/advan_disadvan_informationtechnology.html # 3/4/2009).

2.3 Information Techynology (IT)

Before the study starts to go farther in the next section of the actual usage of the information technology, the study provided some definitions for IT to facilitate the understanding of the actual usage of the technology. There are many definitions of IT from different perspectives depending on the focus of each study.

According to (Watson, 2007) IT includes hardware, software and elecommunication equipment which is used to capture, process, store, and distribute information. Another study was conducted by (Brynjolfsson, 1991) defined IT as Office, computing machines, communications equipment, instruments, photocopiers and related equipment, and software and related services. According to (Ajiferuke and Olatokun, 2005) IT refered to any equipment, or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission.

According to U.S. Bureau of Economic Analysis (BEA), IT refers to office, computing and accounting machinery (OCAM) which consists primarily of computers (Baily, Gordon, 1988). Some researchers look specifically at computer capital, while others consider the BEA's broader category as Information Processing Equipment (IPE). IPE includes communications equipment, scientific and engineering instruments, photocopiers and related equipment. Besides, software and related services are sometimes included in the IT capital (Horzella, 2005).

Based on the above definitions, the present study defines IT as office, computing machines, hardware, software, instruments, photocopiers, telecommunication equipment, related services, which are used by employees to capture, process, store and distribute information.

2.4 Actual Usage

Actual use is the *need for data and information requirements for planning and management functions by implementing processes supported by extensive data collection and analysis capacity* (Sliuzas, 1999). Also, definition for the system actual usage such as system actual usage is the *formal, information-based routines and procedures managers use to manage or maintain or alter patterns in organizational activities* (Simmons, 2000).

The actual usage for the information technology define in this study as the implemention for the needed data and information requirements for managing n maintaining the patterns and functions in the organization activities by using scientific and engineering instruments, software, photocopiers, communications equipment and related internet services equipment (Sliuzas et al, 1999; Brynjolfsson & Yang, 2000).

According to Kiraz and Ozemir (2006), technology acceptance model (TAM), developed by Davis, Bagozzi, and Warshaw (1989), and Davis (1989), identifies important factors affecting IT usage. Also, TAM explains that the actual use for the new system is affected by an important factor namely behavioral intention to use the technology. Latest studies have confirmed that behavioral intention to use the technology is merely a mediated factor (Davis, 1989). In addition to behavioral intention, other studies have found several other factors that affect the actual use of technology. For example, Jones and Hubona, (2005) found that staff seniority, age, and education level affect usage behavior, perceived ease of use and perceived usefulness. In other words, the study supported all TAM construction.

Similar finding was reported by Kishore and McLean, (2001), who found that perceived usefulness and ease of use were granted as the main factors affecting actual usage of IT. In another similar study conducted by (Goeke, 2006) by using TAM, he found that perceived usefulness and perceived ease of use had significant affect on the usage for the technology, and usefulness was found to have a stronger effect than ease of use. In addition, he found a direct effect of usefulness in the actual usage of a system.

However, some studies did not find any relation between the above factors and actual use of technology. Among these studies is the one conducted by (Al Mutairi, 2007) to examine TAM applicability in the Kuwaiti ministries. He did not find any empirical support for the relationship between the variables in TAM. He argued that the insignificant finding might be due to the differences in culture.

Most of the previous studies in the acceptance of information technology used actual use as dependent variable to explain the actual usage for particular system in order to facilitate the adoption for this system. However, in the same line with the previous study conducted by (Yalcinkaya, 2007), this study focused in the user reactions and technology usage behavior, and the study stated that intention to perform a behavior in a given situation and subsequent performance of that behavior is a function of (1) perceived usefulness and ease of use toward the performance of a specific behavior in a particular situation and (2) social norms influencing the individual's performance of the behavior.

Due to the fact that there were mixed empirical findings on the validity of TAM2, there is a need to investigate the factors affecting the intention to use towards the actual usage of technology and test the relations of the technology acceptance model (TAM2). In addition, from these factors effecting the actual usage of technology is behavioral intention to use, which considered the important factor that could predict the employee’s and managers behaviour toward the actual usage as explained in the next section.

2.5 Behavioral Intention to Use (Dependant Variable)

Behavioral intention refers to the intention of end-user to make use of the new information technology (Seymour, Bakanya, & Berrnge, 2007). Behavioral intention refers to the degree to which a person has formulated conscious plans to perform or not perform some specified future behaviour (Davis, Bagozzi, & Shaw, 1989). Behavioral intention can also be defined as it is an indication of an individual's readiness to perform a given behavior. It is assumed to be an immediate antecedent of behaviour (Ajzen, 2002).

This study defines behavioral intention as it is how hard people are willing to try and of how much an effort they are planning to exert, in order to perform the behaviour Ajzen and Fishbein, (1996).

Technology Acceptance Model (TAM) which was created by (Davis& Bagozzi & Warshaw, 1989) and (Davis et al., 1989) Studied some important factors affecting the use of the information technology. TAM explained how the behaviour intention to use the technology effected by one basic factor to cause the actual use for the new system, therefore the behavior intention to use the technology is the merely or only determined related to actual use for the system. Beside that, the latest studies confirmed that the behaviour intention to use the technology is the merely mediated factor (Kiraz & Ozdemir, 2006).

According to several researchers (e.g. Davis, 1989; Hwang & Yi, 2003; Kiraz & Ozdemir, 2006; Eastin M. S. and LaRose R. (2000) & Phua, Gan, (2000), Technology Acceptance Model TAM consists of four main factors as major determinants of technology acceptance. These factors are perceived ease of use, perceived usefulness, attitudes towards usage, and behavioral intention to use the frequency of use of technology. In his study, Chang (2004) found strong positive relations among perceived usefulness, perceived ease of use and user's attitudes towards the use the technology. Attitude was found to have a strong relation with user intention to use. Intention to use was found to have a strong relation with actual usage, confirming the positive significant relation in TAM and its constructs in predicting user acceptance of technology.

It is observed that attitude is not the only factor affecting intention to use as evidenced by a study conducted by Gong, Xu, and Yu (2004), who aimed to identify additional determinant factors of technology acceptance in the education sector. The study found direct and indirect significant effects of perceived usefulness on intention to use the system; the effect is strong on the intention to use the technology more than the effect of attitude.

Aversano (2005) confirmed that behavior intention to use the technology is a determinant for actual behavior. He also found three factors predicting intention to use and they are attitude, subjective norms and perceived behavior control. In another study conducted by Hwang and Yi (2003) on the effect of intrinsic motivation and computer self-efficacy on the use of web-based information systems by using TAM, they found that behavioral intention and self-efficacy have a significant effect on actual use. Other studies also reported the same result (Klloppiing & McKiinneyy, 2004: Jones & Hubona, 2005).

A study by Chismar and Patton (2002) was conducted among physicians to examine their intention to adopt Internet-based health applications by using TAM2. The study found that the strong determinant for intention to use was perceived usefulness. Intention to use by physicians was explained by the effects of usefulness and output quality. The relation between perceived usefulness and intention to use was significant, whereas image, subjective norm and perceived ease of use were not significant due to physicians' high level of adaptability, cognitive capacity and intellect. In other words, they comprehend faster than normal people when it comes to new technologies. They are even willing to adopt information that has beneficial applications even if it they are not easy to use.

However, empirical findings on the validity of TAM are varied and mixed. The study conducted by Al Mutairi (2007), which aimed to examine TAM applicability in the Kuwaiti ministries revealed findings which did not support the relationship between the variables in TAM. In other words, the study did not find any relation between ease of use and usefulness, and it did not also find any relation between ease of use and usefulness, and actual usage. In a different study, Shih and Huang (2009) examined the effect of behavioral intention on actual usage of ERP implementation based TAM. The study found that perceived ease of use does not have a positive direct effect on perceived usefulness. However, perceived ease of use has a positive direct effect on intention. In addition, perceived usefulness was found to have a positive and direct effect on behavioral intention.

Due to the fact that there were mixed findings, there is a need to investigate the factor intention to use towards the actual usage for the technology in different cultural and organizational settings. In addition, there is a need to investigate the factors that affecting on intention behavior to use the technology, from these factors perceived ease of use and perceived usefulness.

2.6 Perceived Ease of Use and Perceived Usefulness (Mediators)

Perceived ease of use and perceived usefulness are considered as belief factors that mediate the relation between actual usage of IT and the external variables that affect technology acceptance. According to TAM, employees accept to use new software after they perceive it to be useful and easy to use (Davis, 1989). Perceived usefulness refers to the degree of which the user believes that the use for a particular system will support his work. On the other hand, perceived ease of use refers to the degree of the user's belief that the usage for a particular system will be out of effort (Davis, 1989).

Most studies conducted on technology acceptance confirmed the importance of these factors in explaining the acceptance of technology usage. However some studies found both perceived usefulness and perceived ease of use as having the same affect on technology acceptance (Almutairi, 2007; Kishore, McLean, 2001; Singktarv, Akbulut, & Houston 2002; Venkatesh & Morris, 2000), while some found that perceived ease of use has more effect than perceived usefulness (Kwan & Wang, 2009; Jones & Hubona, 2005; Klloppiing & McKiney, 2004). Meanwhile, some other studies found perceived usefulness as having more effect than perceived ease of use (Pikkarainen & Pikkarainen & Karjaluoto & Pahnila, 2004; Klopping & McKinney, 2006).

A study by Park, Brien, Caine, Rogers, Fisk,Ittersum, Capar, and Parsons (2006) aimed to identify the variables that explain technology acceptance. The study found that perceived usefulness and perceived ease of use of the technology are not solely able to affect technological acceptance. Other variables affecting technology acceptance are technology characteristics, organization characteristics, subjective norm, user characteristics, which are all interacted with acceptance through a positive effect on perceived usefulness. In a different study, Kishore and McLean (2001) found that perceived usefulness and ease of use were revealed as the main factors affecting actual usage of IT. Almutairi (2007), in his study on the applicability of the technology acceptance model (TAM) in the Kuwaiti ministries, also demonstrated a significant relation between perceived usefulness and perceived ease of use and technological acceptance.

Similar finding was also reported by Singktarv, Akbulut, and Houston (2002). They identified factors that affect acceptance of high school students of a software application when the initial use of the application is mandatory. The finding revealed positive relationships between perceived usefulness, ease of use and innovative usage behavior and a positive relationship between perceived usefulness and perceived ease of use.

The study conducted by Venkatesh and Morris (2000) aimed to investigate gender differences in the context of individual adoption. The study confirmed technology usage in the workplace by using technology acceptance model. The study found a difference between women and men. While men perceived usefulness as more important than women in affecting intention to use the system, women, on the other hand, perceived ease of use as being more important than men.

As mentioned, there are some studies that found perceived ease of use as having more effect than perceived usefulness in TAM. For example, a study conducted by Brown (2002) aimed to examine perceived ease of use for web-based learning environment in developing countries and non-developed countries. The study found that ease of use predicts usefulness and actual usage but usefulness does not predict actual usage. Moreover, there are significant influences of self-efficacy, ease of finding and ease of understanding on perceived ease of use, with ease of understanding influences more than ease of finding on perceived ease of use. Also, the self-efficacy has the strongest influence on ease of use but computer anxiety had the weakest influence.

Furthermore, a study conducted by Ali (2006) distinguished between general and system-specific computer self-efficacy (CSE) and examined the effects of both levels of CSE on two key training outcomes: reactions and learning performance. Reactions were examined with respect to perceived ease of use and perceived usefulness. The findings were that general CSE had significant effects on perceived ease of use and far-transfer learning. Even the study found that GCSE had demonstrated a non-significant positive effect on perceived usefulness. On the other hand, SCSE exhibited a non-significant negative effect on perceived usefulness.

A different study conducted by Yi and Hwang (2003) on intrinsic motivation and computer self-efficacy to predict the use of web-based information systems. It was found that behavioral intention and self-efficacy have a significant effect on actual use. Perceived enjoyment and self-efficacy were significant determinants of ease of use. Also, the study found that self-efficacy was a strong determinant of ease of use and actual use. Additionally, the study supported all the relations proposed in the technology acceptance model.

Moreover, there are some studies that found perceived usefulness to have more effect than perceived ease of use in TAM. For example, a study conducted by Goeke (2006) aimed to examine the effects of experience and expertise on the actual use for the data warehouse by using TAM. The study found that perceived usefulness and ease of use had significant effect on the technology usage, and usefulness was found to be stronger in the effect than ease of use. There is a direct effect of usefulness on the actual usage of the system. Also, the study found a direct effect of ease of use on perceived usefulness and a positive effect of the external variable on both perceived usefulness and ease of use.

Saeed and Helm (2008) proposed that perceived usefulness is affected by information quality and system integration which will drive post adoption usage of the IS. The study findings support that system integration and information quality are significant predictors of usefulness, which was found to be positively and significantly related to extended usage and exploratory usage. Also, the study revealed that perceived usefulness affects the initial acceptance of IS, suggesting a stronger relation between exploratory usage and usefulness.

Gyampah and Salam (2003) aimed to examine the effect of ERP enterprise resource planning training and ERP project communication on TAM variables through the psychological variable-shared beliefs in the perceived benefits of the ERP system. The study found that perceived usefulness is an important factor affecting positive attitudes towards the system, while perceived ease of use was found not to affect attitude. It also provided empirical support for other studies that showed that perceived ease of use does not have a significant relation to attitude in the usage of the system. The study found that training has an important and significant positive influence on the shared beliefs in the benefits of the system. Also, the shared beliefs influence both perceived usefulness and perceived ease of use of the system through its effect on attitude, which in turn affects intention to use. The study also confirmed that communication with effective training affect the core TAM variables, and training on the system has significant effect on perceived ease of use.

In a different study, Klopping and McKinney (2006) examined the role of experience on consumer's intentions to shop online. The study found that experience has direct and indirect effects on intention to use e-commerce, and there are moderating effects on perceived usefulness, playfulness, and self efficacy to intention to use e-commerce. Perceived usefulness and playfulness are considered important by inexperienced e-commerce shoppers, while for more experienced e-commerce shoppers, perceived usefulness of the site can be evidence of its independence from playfulness.

Pikkarainen, Pikkarainen, Karjaluoto, and Pahnila (2004) found that perceived usefulness, perceived ease of use, perceived enjoyment, information on online banking, security and privacy have an impact on the acceptance of online banking in Finland. Perceived usefulness and the amount of information on online banking are factors that mostly influence the use of online banking services. The study also found perceived usefulness is a stronger predictor for the acceptance of technology than perceived ease of use. Similar findings were also reported by Bani-Ali and Money (2005). They revealed that the effect of ease of use was lower than other proposed factors. A possible explanation is that users' level of experience with new software may influence the relative importance of system's ease of use.

Chung, Skibniewski, and Kwak (2008) aimed to identify and analyze critical factors that need to be considered to ensure successful ERP system implementation in the construction industry. The study found that subjective norm has a significant relation with perceived usefulness and perceived ease of use has a significant relation with perceived usefulness. Perceived usefulness and perceived ease of use also have a significant relation with intention to use, and perceived ease of use has an indirect relation with the intention to use through perceived usefulness. Even perceived ease of use, perceived usefulness, subjective norm, and trust have significant effects on a professional's intention to use the adverse event reporting system. Perceived ease of use and subjective norms have a direct effect on perceived usefulness and trust, a fact that was confirmed in the study conducted by Wu, Shen, Lin, Greenes, and Bates

(2008), which aimed to integrate the variables of trust and management support into the model to investigate what determines acceptance of adverse event reporting systems by healthcare professionals users.

In Taracan , Varol and Toker , (2010) attempted to investigate the factors that affect the intention to use IT by academicians. They found perceived usefulness as having a direct influence on intention to use and perceived ease of use as having a significant influence on an academician’s intention to use IT. The study showed that perceived ease of use has a direct positive effect on perceived usefulness. Besides that, perceived ease of use has a mediating impact on intention to use through perceived usefulness. Moreover, among the variables in TAM, perceived usefulness has a greater effect on intention to use more than perceived ease of use.

Li, Hess, McNab, and Yu (2009) aimed to investigate the influence of organizational cultur values on acceptance of a personal web portal by users in China and the United States. The study found that perceived usefulness and normative beliefs have positive effects on intention. Perceived ease of use did not have a significant direct relationship with intention but it had an indirect relationship through its impact on perceived usefulness. Schepers and Wetzels (2007) aimed to make confirmatory statements on the role of subjective norm. Additionally, the study compared TAM results by taking into account the moderating effects of one individual-related factor, one technology-related factor, and one contingent factor culture. The study confirmed the original TAM relationships and showed significant effects of perceived usefulness and perceived ease of use on attitude and behavioral intention to use. There is a strong effect of the subjective norm on the intention to use and perceived usefulness.

Along similar lines, Vathanophas, Krittayaphongphun, and Klomsiri (2008) aimed to show how TAM is used to measure the acceptance of Internet use by naval officers in the Naval Department in Thailand. The study found that perceived ease of use and perceived usefulness have a significant effect on user's intention. Perceived ease of use has a significant correlation with perceived usefulness and it showed a significant correlation between prior experience and perceived ease of use. There is also a significant correlation between job relevance and perceived usefulness. But training was found not to have any significant correlation with either perceived usefulness or perceived ease of use.

In contrast to previous studies, Shih and Huang (2009) found that perceived ease of use does not have a positive direct effect on perceived usefulness. However, perceived ease of use and perceived usefulness have positive direct effects on intention. Behavioral intention directly and positively affected actual use and was supported by Shih, fang (2006). Self-efficacy has a positive relation with perceived ease of use and top management support has a positive direct effect on self-efficacy and perceived usefulness as well as perceived ease of use.

Due to the fact that there were agreement in the previous studies concern the important of the effect of perceived ease of use, and perceived usefulness on the intention to use technology. However, there are mixed findings about which one of these factors is more stronger in its effects on the intention to use the technology. Therefore, there is a need to investigate the relationship between, perceived ease of use, and perceived usefulness with intention to use technology in different cultural and organizational settings, specially in the public sector. In addition, there is a need to investigate thefactors could effect on perceived ease of use, and perceived usefulness towards the actual usage for the technology, these factors call Independent Variables and it explained in the next sections in details.

2.7 Independent Variables

This study containd four main categorical factors, these factors are individual characteristics such as self-efficacy, system characteristics such as information quality, social characteristics such as subjective norms and organization culture and institutional characteristics such as top management support and government support that could possibly affect the use or adoption of such technology. The following sections explain these factors in details.

2.7.1 Individual Differences

`

Individual differences are defined as the individual's perspective about his own ability to succeed in the result he wants to reach it or goal he wants to achieve depending on the desire he has to achieve his goal (Lewis, Agarwal, & Sambamurthy, 2003). Another definition is the dissimilarities among people including differences in perception and behavior, traits and personality characteristics and circumstances (Stylianou & Jackson, 2007). Individual differences in acceptance for IT are an issue for researchers. According to Agarwal and Prasad (1999), "The importance of individual differences as a significant theoretical construct in technology acceptance is indisputable. What is not clear however is the extent to which individual differences matter in work settings because of the limited managerial control that can be exercised over such differences" (p. 23). Hence, the present study aims to investigate this variable.

Agarwal and Prasad (1999) also suggest that individual differences can be utilized to organize the profile of individuals to be more acceptable of new technologies. The information about the individual user can help in recruitment and selection activities. However, acknowledging the mediating influence of beliefs and the reality that managers often cannot choose individuals to become users of IT, Agarwal and Prasad also suggest that technology acceptance can be facilitated by utilizing other intermediations that directly affect beliefs such as training and developing a learning culture. Partitioning out the variance explained by these differences would permit clearer insight into the effects of other managerially controllable constructs on technology acceptance (Agarwal, 2000).

Based on the above argument, this study focuses on computer self-efficacy as one of the individual differences that determine technology acceptance because self-efficacy can affect one's beliefs (Agarwal & Prasad, 1999).

2.7.1.1 Computer Self-efficacy

In order to exhibit the importance of computer self efficacy and its effect on individual beliefs, this study defines computer self-efficacy as the judgment of the user's ability to perform the computer related task (Slylianoa & Jacksn, 2007).

In their study, Park and his colleagues (2006) sought to identify variables that would determine technology acceptance. They found psychological traits like personal innovativeness, technology readiness, and self-efficacy are stronger determinants of acceptance of computer technology than demographic factors (age, gender, education). The study also revealed that older users with high self-efficacy accepting technology are more than younger users with low self-efficacy. Organizational characteristic and individual characteristic interact with technology characteristics to influence acceptance of technology through positive effect on perceived usefulness.

Studies have also demonstrated that self-efficacy and computer anxiety have strong influence on use of a system through their effect on perceived ease of use and perceived usefulness (e.g. Brown, 2002), even though they differ in the effects of computer self-efficacy on beliefs: some revealed significant effect while others did not. For example, Darsono (2005) investigated how external variables such as individual differences and system characteristics influence lecturers as professionals to accept Internet technology. The study differentiated between common end-user knowledge workers, managers in different levels and individual professional especially lecturers as individual professionals in terms of autonomous specialized training (dependent work), practice and professional work arrangement. The study found that individual differences (computer self-efficacy, knowledge of search domain) and system characteristics (terminology, screen design, relevance) have an indirect impact on perceived usefulness, ease of use and lecturers' intention to use the Internet but computer self-efficacy and screen design have direct impacts on using the Internet.

A similar study was conducted by Gong, Xu, and Yu (2004) to identify additional determinants of the technology acceptance in the education sector. The study found direct and indirect significant effects of perceived usefulness on intention to use the system, and these effects are strong on the intention to use more than the effect on attitudes. They also found that self-efficacy has a strong direct effect on intention to use and perceived ease of use but the effect on ease of use is more than on the intention to use.

Sharp (2006) examined the development, extension, and application of TAM for information systems educators and found that computer self-efficacy is a significant determinant of perceived ease of use. Similar finding was also reported elsewhere (Chan & Lu, 2004; Gong et al., 2004. Lewis, Agarwal, and Sambamurthy (2003) also demonstrated similar result, in which they reported that computer self-efficacy had a significant effect on ease of use alone but not on perceived usefulness. From this study, it appeared that perceived instrumental outcomes associated with technology use are not influenced by individual judgments of their ability to engage in technology use.

Hwang and Yi (2003) conducted a study on the effect of intrinsic motivation and computer self-efficacy by using TAM on the use of web-based information systems. The study found that behavioral intention to use and self-efficacy have a significant effect on actual use, and even perceived enjoyment and self-efficacy are significant determinants of ease of use. The study found that self-efficacy is a strong determinant of ease of use and actual use and perceived enjoyment has a significant direct effect on ease of use. The study supported all the relations in the technology acceptance model. Similar results were also reported by other researchers (e.g. Jones & S. Hubona, 2005; Klloppiing & McKiinneyy, 2004).

Slylianoa and Jackson (2007) revealed that self-efficacy influences the technology usage for long period and even influences the selection of what technology to use (i.e. e-commerce and Internet technology) and its perceived usefulness. In a study conducted by Teo (2009) aimed to build a model to predict the level of technology acceptance by pre-service teachers at a teacher training institute in Singapore, he found that computer self-efficacy has a direct effect on behavioral intention to use technology and perceived ease of use. He also reported that technological complexity and facilitating conditions affect intention to use indirectly. He further demonstrated that computer self-efficacy has more impact on perceived usefulness and less effect on perceived ease of use.

Another similar study conducted by Klopping and McKinney (2006) aimed at examining the role of experience on consumer's intentions to shop online. They found moderating effects of self efficacy, perceived usefulness and playfulness to intention to use e-commerce, and that experience has a direct and indirect effect on intention to use e-commerce. However, Chau (2001) did not find any effect of computer self efficacy on beliefs.

In a different study, Shih and Huang (2009) found that perceived ease of use does not have a positive direct effect on perceived usefulness but it has a positive direct effect on intention. On the other hand, perceived usefulness was found to have a positive direct effect on intention. Behavioral intention directly and positively affects actual use. This finding was supported by Shih, Fang (2006). Shih also demonstrated that self-efficacy does not have any relation with perceived usefulness but a positive relation with perceived ease of use. Finally, top management support has a positive direct effect on self-efficacy and perceived usefulness and perceived ease of use.

Based on the literatures above, the present study proposes that computer self-efficacy is important in affecting the beliefs of perceived ease of use and perceived usefulness. Therefore, this study considers computer self-efficacy as one of the independent variables to be tested against the beliefs.

2.7.2 System characteristics

According to the study conducted by Agarwal (2003), individual characteristics, institutional characteristics and social characteristics are not the only factors that interact with each other to influence technology acceptance. But they even interact with technology (system) characteristics to influence technology acceptance. This proposition was supported by Park et al. (2006), who found that individual characteristics interacted with technology characteristics to influence technology acceptance.

Various technology characteristics have been studied that could affect technology acceptance such as relative advantage, result demonstrability, trialability, visibility, image, compatibility, voluntariness (Venkatesh, Morris, Davis, & Davis, 2003) and information quality. The present study considers information quality as a determinant of the system characteristics as it theoretically affects technology acceptance thought its interaction with individual characteristics, institutional characteristics and social characteristics.

2.7.2.1 Information Quality

According to the study conducted by Ahn, Ryu, and Han (2007), information quality (output quality) is considered an important determinant of technology (system) characteristics which can provide an in-depth understanding of technology acceptance. Information quality has been defined as the type, level of detail and variety of information which are determined during the system design and development phase while the timeliness, accuracy, and reliability result from the system operations (Ahn et al, 2007). Information quality also refers to the report content which is considered as a measurement of user perceived effectiveness for the quality of the information (Srinivasan, 1985; Ahn et al, 2007). The information content includes accuracy, relevance, adequacy, and understandability of report contents, while form includes quality of format, timeliness of reports, manner of presentation, and result of information (Srinivasan, 1985).

Most of the studies conducted regarding technology acceptance found that information quality is an important factor of technology acceptance. But some studies considered information quality as being important from the vendor's perspective while other studies considered information quality as being important from the user's perspective. Among the studies which considered information quality as being important to facilitate the acceptance of the technology from the vendor's perspective are the one conducted in Malaysia by Mohd, Syed Mohamad, and Zaini (2005). They examined the relation between information quality and the acceptance of doctors of Electronic Medical Record System (EMR) in one Malaysian hospital.

The study found that information quality has a significant impact on perceived usefulness and perceived ease of use toward using the system. The study concluded that it is important for system designers to communicate effectively with the end users about the information quality factors.

From the user’s perspective, by Chismar and Patton (2002) conducted a study among physicians to examine their intention to adopt Internet-based health applications by using the applicability of the TAM2 in Hawaii. The study found that the important factor for predicting the intention to use the system is the usefulness of the technology and the sufficiency of the output quality for their daily work. Similar result was reported by Algahtani (2004), who aimed to enhance understanding of the acceptance of technology in different cultures. The study found that information quality, relative advantage, compatibility, observed ability and trial ability have a positive significant relation with the end user’s acceptance while complexity was to have a negative effect on computer acceptance.

Ahn, Ryu, and Han (2007) conducted a study that aimed at testing the relationship between Web quality factors and user acceptance behavior with a focus on service quality. They also investigated the effect of playfulness on user acceptance of online retailing. This study supported the result of previous studies (Chismar & Patton, 2002; Mohd, Syed Mohamad, & Zaini, 2005) in which information quality has a positive impact on perceived ease of use and usefulness of a website. Information quality refers to as having these characteristics: various, complete, detailed, accurate, timely, relevant, and reliable. The same study found that system quality, information quality and service quality had significant effects on playfulness, ease of use, and usefulness, and this effect increases when mediated by ease of use. Even service quality, system quality and information quality were found to have significant effects on intention of behavior to use. The quality of the Web has a significant affect on intention behavior to use, mediated by playfulness, ease of use, usefulness and attitude which are considered as user substantial beliefs.

Similar result was reported by Bani-Ali & Money (2005), who examined the relationships among computer self-efficacy, ease of use, project complexity, system functionality, information quality, performance impact, organization size, project size, user education, training, and experience level. The study found that system characteristics are the determinant factors affecting the new software usage. Information quality, system functionality, and ease of use have strong positive and direct relationships with using the new software. Also, information quality provided good explanatory power for the new software usage. Their result was confirmed by Staples, Wong, and Seddon (2002), who examined the effects of the implementation of a new system on its users, with a focus on the relationship between pre-implementation expectations and their perceived benefits based on post-implementation experience. The study's finding confirmed that system usefulness, ease of use and information quality have strong relations to information system success and user satisfaction. Saeed and Helm (2008) found that system integration and information quality are significant predictors of user perceptions regarding information system usefulness. Moreover, there is a significant effect of information quality on extended usage and system integration on exploratory usage which was only partially supported.

In sum, information system characteristics such as information quality offer critical motivation that influences the user's perceptions about the value of the information system and its importance. In other words, if users are convinced that the information system affects and supports their work at the post adoption stage, they will extend the usage and also experiment with how to apply the information system in various settings (Saeed & Helm, 2008).

Due to the fact that there were agreement in the previous studies concern the important of the effect of information quality on the usage of the technology. Based on the existing empirical evidence, this study considers information quality as an important determinant of the user's acceptance of the IT. Therefore, there is a need to investigate the effect of information quality on perceived ease of use and perceived usefulness towards the intention to use technology in different cultural and organizational settings, specially in the public sector.

2.7.3 Social Characteristics

Social factors were defined as whether the subject perceived that their work group (faculty, staff, study group, professor) thought they should use the intranet and whether or not they would follow what others thought they should do Chang, (2004). Social influence is the degree to which an employee perceives that others coworkers believe he or she should use a technology (Dadayan, Ferro, 2005).

Social characteristics (social influence) are defined as the perceived social pressure to perform or not to perform the behavior (Fishbein &Ajzen, 1975). It also, defined as the degree to which an individual perceives that important others believe he or she should use the new system (Davis, at al, 1989).

Another conceptualization is that information conveyed via individuals' social networks influences their cognition about a target technology (Lewis, Agarwal, Sambamurthy, 2003). Social factors have been defined as whether the subject perceives that their work group (faculty, staff, study group, professor) thought they should use the intranet and whether or not they would follow what others thought they should do (Chang, 2004). It has also been defined as the degree to which an employee perceives that other coworkers believe he or she should use a technology (Dadayan , Ferro, 2005).

2.7.3.1 Subjective Norms

Subjective norm (SN) is defined as the result of an individual's response to the perceived expectations of his or her peer group and his belief that he must comply with those expectations (Aversano, 2005). It has also been defined as the person's perceptions about most of the people who are important to him think that he should or should not perform the behaviour (Park et al., 2006). Subjective norm comprises of interpersonal influence like family members, friends, colleagues or work-related activities and external influences like expert ideas, different kinds of media reports. Subjective norm of an individual influences his acceptance through a positive effect on perceived usefulness.

When Davis developed the technology acceptance model (TAM) in 1989, he ignored subjective norm as a factor affecting technology acceptance. But later, he incorporated this variable in his TAM2 and TAM3 after he realized the importance and the effects of social influences on individuals on the acceptance of technology. In fact, many researchers have found the influence of subjective norm or social influence on user's acceptance (Kwan & Wang, 2009; Park et al., 2006; Raaij & Schepers, 2008).

Chung, Skibniewski, and Kwak (2008) examined critical factors that need to be considered to ensure successful ERP system implementation in the construction industry. The study found that subjective norm has a significant relation with perceived usefulness, which has a significant relation with perceived ease of use. Perceived usefulness and perceived ease of use were found to have a significant relation with intention to use and perceived ease of use has indirect relation with the intention to use through perceived usefulness. Additionally, there is a strong effect for subjective norm on intention to use and perceived usefulness, which was confirmed by Schepers and Wetzels (2007).

Wu, Shen, Lin, Greenes, and Bates (2008) integrated variables trust and management support to investigate what determines acceptance of adverse event reporting systems by healthcare professional users. The study found that perceived ease of use, perceived usefulness, subjective norm, and trust have a significant effect on a professional’s intention to use the adverse event reporting system. Perceived ease of use and subjective norms had a direct effect on perceived usefulness and trust. In a different study to explore adoption of ICT to enhance government-to-employee interactions in a government organization in a developing country, Gupta, Dasgupta, and Gupta (2008) found that subjective norm has the most contribution (total effect) to the intention to use the system.

Several other studies have also found social influences having a positive influence on technology acceptance. For example, a study was conducted by Singletary, Akbulut, and Houston (2002) to identify factors that affect the acceptance of high school students for software application when the initial use of the application is mandatory. The study found a positive relationship between social norms and image, perceived usefulness and innovative usage behavior. Chang (2004) explored the validity of the extension of Technology Acceptance Model (TAM) based on social factors and facilitating conditions as the main factors to predict intranet/portal usage. He found that social factors can be effective when related with the user attitudes to predict intention to use, and facilitating conditions can be effective when related with intention to use to predict actual usage. In other words, social factors were related to intention to use the intranet and facilitating conditions were related to the actual use.

Additionally, social influences like subjective norms have significant effects on student's acceptance of the new technology. For example, a study was conducted by Yang (2007) to examine the relationship between students' attitude toward the use of WebCT and the determinants of the actual usage in light of social presence and sociability using technology acceptance model. The study found that subjective norms have a significant effect on students' acceptance of the technology.

In a different study, Yalcinkaya, (2007) found that subjective norm has a negative direct effect on the acceptance of police officers to use the POLNET system in Turkey. This is because the system implemented in the police force facilitates their job better in dealing with the public.

However, in a study by Venkatesh and Morris (2000a) to investigate gender differences in the context of individual adoption and technology usage in the workplace by using technology acceptance model, they did not find any effect of social influence on technology acceptance. They revealed that subjective norm did not influence men in using the system but influence women in the beginning of system introduction. But after a short time there was no effect in the women's intention to use the system despite the increase in their experience. Also, perceived usefulness, perceived ease and subjective norm can explain the effect on women's intention to use the system. However, usefulness can only explain men's intentions to use the system.

Seymour, Makanya, and Berrange (2007) also did not find any effect of social influences on acceptance of ERP systems using UTAUT. They further found that social influence reduces until it becomes insignificant on the implementation of the system. Venkatesh and Davis (2000) further found that social constructs (subjective norm, social factors and image) are not significant when the systems usage is optional. But if the usage for the system is obligatory, social influences were found to have a direct effect on intention.

Chismar and Patton (2002) revealed that physicians are not influenced by peer pressures on how they will be perceived if they adopt the technology because they are independent and do not place any attention to subjective norm or image, in their study to examine the extended Technology Acceptance Model (TAM2)'s applicability on the physicians' intention to adopt Internet-based health applications. The study found that perceived usefulness is a strong determinant of intention to use. Perceived usefulness, job relevance and output quality have significant effects on intention to use. But perceived ease of use, the social factors subjective norm and image do not have significant effect on the intention to use. These results were supported by Seymour, Makanya, and Berrange (2007), and Venkatesh and Davis (2000).

Ajjan and Hartshorne (2008) conducted a study to examine the faculty's awareness of the benefits of Web 2.0 to supplement in-class learning. They found that subjective norm did not influence behavioral intention. This insignificant effect might be explained due to the high degree of independence the faculty has when developing their classroom environment.

User's experience interacts with subjective norms to influence usage of new software. In other words, subjective norms have a strong influence on user's perceptions. Subjective norms also play a strong and complex part in the usage of the software system, as revealed by Chiasson and Lovato (2001). In a different study, Aversano (2005) explored why some people refuse to use mobile telephone in USA. The study used the theory of Ajzen to explore human behavior in order to understand a person's actions like social attitude and personality traits. The study used theory of planned behavior (TPB) to confirm that behavioral intention to use determines actual behavior and there are three factors predicting intention to use the technology like attitude, subjective norms and perceived behavioral control as stated in theory of reasoned action (TRA).

based on the previous arguments, the current study supports the notion that social influences like subjective norm provides an important basis for expected manners of behavior. The beliefs and attitudes of any group can shape the usage behavior of the technology of members in this group. There are various sources of social influence that could determine one’s intention and hence behavior such as peers, friends, supervisors, and co-workers. Social pressure might induce new users to exhibit initial adoption behavior and normative influences were found to be more important in intentions to adopt. However, attitudes dominated as a predictor of continued intentions to use (Agarwal, 2000).

Therefore, this study is going to test the effects of social influences like subjective norms on technology acceptance in order to provide a more comprehensive explanation for its effects on technology acceptance in a different culture. Following the subjective norms, the next section undertaking the organization culture in details.

2.7.3.2 Organization Culture

Organization Culture consists of the patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiments in artifacts (Zakour, 2004). It is "the collective programming of the mind which distinguishes the members of one group or category of people from another" (Zakour, 2004). It is also defined as: (a) something that is shared by all or almost all members of some social group; (b) something that the older members of the group try to pass on to the younger members; and (c) something that shapes behaviour, or that structures one's perception of the world (Merchant, 2007).

Merchant (2007) carried out a study aimed at investigating the relationship between the cultural/work values of the people involved and IT adoption among three cultures using technology acceptance model TAM. The study found that organization culture is a crucial element that determines the acceptance or rejection of technology. He further revealed that the French and the Americans would most likely adopt a new innovation, but the Chinese were less enthusiastic to adopt as fast as the French and the Americans. Brown et al. (1998) suggest in their study the need to consider cultural resistance to technologies.

In his study to extend TAM to give a better understanding of the organizatinal cultural values differences as predictor of behavior toward IT, Zakour (2004) found that differences in cultural dimensions across countries, such as individualism/collectivism, power distance, masculinity/femininity, uncertainty avoidance, monochromic/polychromic time, and high/low context, affect technology acceptance. For example, people who have high-context values for technology have less favorable perception toward the technology than those who have low-context values. That was due to the high context people do not provide more information in the context of the message when using electronic communication. Perceived information quality will more likely to influence intention to use the technology for people in a feminine than those in a masculine culture. People with low level of uncertainty avoidance use IT more than people with high level of uncertainty avoidance. Zakour (2004) further revealed that uncertainty avoidance, individualism/collectivism, power distance and masculinity/femininity, individualism/collectivism are moderators between subjective norms and intention to behavior. He also demonstrated that social influence from important people in cultures who have high uncertainty avoidance is much more important in determining IT usage than in cultures comfortable with uncertainty avoidance.

In a different study that looked at the relation between the culture/work value of the people and the usage of IT using TAM, Merchant (2007) found that the cultural orientation affects the individual in the way they communicate in their workplace to achieve the company goals, moderated by perceived usefulness and ease of use. The study was conducted in many countries like America, France, China and five Arab countries.

Yoon (2009) explored the effect of organizational culture on consumer acceptance of e-commerce in China. The study confirmed that the consumer acceptance model could be applied in developing countries. Perceived usefulness, perceived ease of use and trust are important factors of consumer e-commerce acceptance. Moreover, the study found that uncertainty avoidance has a direct effect on intention to use and moderates the effect on the relationship between perceived usefulness and intention to use. Additionally, uncertainty avoidance is considered the most influential factor of the organizational culture in affecting consumer e-commerce acceptance.

Yeniyurt and Townsend (2003) found that uncertainty avoidance has a negative effect on the acceptance rates of new products. They contend that in a high uncertainty avoidance culture, people may not be inclined to carry out online shopping. They further found that societies with high power distance are not more open to new ideas and products. Therefore, lower acceptance of e-commerce in these societies is expected. However, the study found that power distance and individualism have positive effects on intention to use. The unexpected result was due to the fact that customer in high power distance societies may regard online shopping as an authoritarian value. Masculinity was found to have a moderating effect between perceived ease of use and perceived usefulness and intention to use in e-commerce acceptance.

Similarly, Li, Hess, Mcnab, and Yu (2009) investigated the influence of organizational cultural values on acceptance of a personal web portal by users in China and the United States. The study supported some direct effects of individualism/collectivism and time orientation on adoption intention. However, the moderating cultural effects were not supported. Perceived usefulness and normative beliefs had positive effects on intention; however, perceived ease of use did not have a significant direct relationship with intention, and had an indirect relationship through its impact on perceived usefulness. Moreover, the role of individualism/collectivism was supported. Individualism positively affected perceived ease of use. However, its effect was not significant on perceived usefulness. Even time orientation was found to directly affect behavioral beliefs where long-term orientation positively affecting both perceived usefulness and perceived ease of use. Power distance, uncertainty avoidance, and masculinity were not found to affect the relationship between normative beliefs and intentions.

Success in one country does not guarantee success in another country, as in the case of a study conducted by Almutairi (2007) which aimed to test the applicability of the technology acceptance model (TAM) in Kuwaiti ministries in order to understand the IT in the government utilities. The study found that TAM did not explain the acceptance for the technology because it may not have international validity and it may not suit other cultures. Ali (2004) contends that culture could be a barrier for the success or the acceptance of the IT. In his study that aimed to view the low usage of technology specially the Internet in Arab countries in comparison to developed countries, he asserts that if Arab countries want to be in the same level with the developed countries in terms of technology adoption and usage, they should accelerate the development of different sectors like society and the subcultures because most of the problems stem from the perceptions of IT in the Middle East.

Due to the fact that there were agreement in the previous studies concern the important of the effect of Organization cultural on the usage of the technology. Based on the existing empirical evidence, this study considers Organization cultural as an important determinant of the user's acceptance of the IT. Therefore, there is a need to investigate the effect of Organization cultural in different cultural and organizational settings, specially in the public sector. Hence, based on the above, this study considered Organization cultural effects on technology acceptance to provide empirical evidence and hence to offer recommendation for public organizations in their planning for IT development by considering the effect of culture.

2.7.4 Institutional characteristic

Institutional factors refer to the aspects within the organization related to work and the instrument to facilitate in the accomplishment of the work. For example, organizational support and rewards influence workers' beliefs in using technology to accomplish the work (Lewis & Agarwal & Sambamurthy, 2003). These Institutional characteristic such as Top Management support and government support were explained in details in the nest sections.

2.7.4.1 Top Management Support

Top management support refers to the degree to which the top management understands the importance of IS function and the content to which it is involved in the activities (Nathan, Apigian, Nathan, & Tu, 2004). Organizational facilitation or facilitating conditions are defined as the degree to which an employee perceives that an organizational and technical infrastructure exists to support use of the technology (Seymour, Makanya, & Berrange, 2007; Venkatesh et al., 2003).

Top management support in the organization has either positive or negative effects on technology acceptance. Several studies have found that when top management fails to manage and support the usage of the technology at work, technology acceptance would not materialize (Kwan & Wang, 2009; Nathan, Apigian, Nathan, & Tu, 2004). Furthermore, lack of government support, organization support and computer training facilities could prevent end-users from using a particular system, as revealed by Wang, Chen (2006) in his study to examine the quality recognition of medical information systems in Tzu-chi hospital in Taiwan and to explore the factors that make the physicians refuse to use the medical information system.

Vonk , Geertman and Schot (2007) explored ways to improve the effectiveness of strategies for the diffusion of geo-IT in public planning organization. The study revealed that the adoption of the system is caused by various failure categories, such as the negative attitudes of the managers, social disorganization of the users, and unawareness of the potential and the implementation support by the organization.

Conversely, if management support exists in the organization, technology acceptance would materialize. In a study by Wu, Shen, Lin, Greenes, and Bates (2008) that integrated variables upsetting trust and management support into the model to investigate what determines acceptance of adverse event reporting systems by healthcare professional users, they found that management support had a direct effect on perceived ease of use, perceived usefulness, and subjective norm.

Other studies also found that top management support has positive effects on the acceptance or adoption of IT, and the support could be in the form of direct or indirect support. Indirect support is when vendors and consultant are hired in efforts of adopting the system in the organization, while direct support is reflected in the positioning of the IS staff in the planning and developing stages (Hamdy & Al-Enezi, 2009; Nathan, Apigian, Nathan, & Tu, 2004). These studies further provide evidence for the positive effect of top management support on IS function and IS performance.

Management support also comes in the form of designing appropriate strategy to learn the technology and to make the information easier to find and easier to understand so that the adoption of IT system is successful. Brown (2002) confirmed in their study that management support to increase the abilities of the users to use the system and reduce their anxiety from using the system help in the acceptance of technology. Similar finding was reported by Shih and Huang (2009) who found that top management support has a positive direct effect on self-efficacy and perceived usefulness and perceived ease of use, using TAM.

Management support may also be in the form of overcoming obstacles in learning to use the technology through the availability of assistance, as revealed in a study conducted by Lewis, Agarwal, and Sambamurthy (2003). In their study to examine the factors that influence key individual beliefs about technology use, they demonstrated that individual factor of personal innovativeness and institutional factor of top management commitment and support have significant relationships with perceived usefulness and ease of use. Moreover, the institutional factor of top management commitment has positive influence on usefulness beliefs and a significant relationship between top management commitment and ease of use exists, which is attributed to the individual's assessment of the resource allocation implications of top management commitment and support.

Therefore, the current study supports the notion that top management support has positive effects on technology acceptance and without its support the organization will face problems in developing, planning and usage of IT. Therefore, the study tests the effects of top management support on technology acceptance through its effects on the individual beliefs toward the actual usage of technology.

2.7.4.2 Government support

According to the study conducted by Park and his colleagues (2006), there are many factors that influence acceptance of computer technology which are beyond the organization. Some of these factors are external to the organization such as sector government (public vs. private), volatility (uncertainty), growth rates, and concentration of markets, all of which have been shown to affect acceptance of technology.

The role of the government in developing countries varies, and IT is one of the areas that are receiving increased government resources through improvised information programs, increased training opportunities and technology support grants and awards Besley, Burgess, (2002). Many small businesses are taking advantage because of the government support. However, these small businesses to be able to take advantage of government programs, two events have to occur: First, small businesses have to know about them. This means governments have to be proactive in informing small businesses of the programs in the communities within which small businesses operate. Secondly, small businesses must be convinced that their investment of resources into the programs will provide identifiable benefits to their business Besley, Burgess, (2002). Wang , Chen (2006) provided evidence that end-users should perceive that government support exists to use a particular system.

Because government support plays an important role in the acceptance of IT, as shown above, this study examines the effect of this variable on the acceptance of new technology in the public sector in the Republic of Yemen.

2.8 The Theories

The Technology acceptance Model (TAM) has been widely used to predict user acceptance and use based on perceived usefulness and ease of use.

Davis (1989), and Davis et al. (1989) developed the TAM by adapting the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980), to understand the causal chain linking external variables to IT usage intention and actual use in the organizations. IT researchers have used TAM and TRA as a theoretical foundation to conduct research on those factors that affect the user acceptance of IT (Igbaria, 1992).

predictive power and the parsimony of TAM has earned the model reputation, *but parsimony has also been sighted as the model's constraint* (Venkatesh 2000). Mathieson (1991) believes that TAM is predictive but its generality does not provide sufficient understanding from the standpoint of providing system designers with the information necessary to create user acceptance of new systems Wu, Chen, (2005)

An individual’s decision to accept IT is a conscious act that can be sufficiently explained and therefore predicted by his/her behavioral intention (Chau & Hu, 2002). Due to the fact that there is difficulty in identifying determinants of individual intention towards the acceptance of technology, technology acceptance model (TAM) is used in the current study. TAM is an established model in explaining IT acceptance behavior and provides a framework to investigate the impact of external variables on IT use.

There are a number of technology acceptance models and frameworks to explain factors influencing user adoption. Three frequently used models in the literature are as follows:

1. Theory of Reasoned Action (TRA) (Fishbein & Ajzen 1975).
2. Technology Acceptance Model (TAM) (Davis, 1993).
3. Technology Acceptance Model TAM2 (Venkatesh & Davis, 2000).
4. The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003).

2.8.1 Theory of Reasoned Action

A great deal of attention has been given to intention based theory with regard to adoption of technology. Theory of reasoned action (TRA) is a much researched area that has been applied across a number of areas. The authors, Ajzen and Fishebein ascribe that their theory applies to "virtually any human behaviour." IT researchers have used this theory extensively to better understand user's behaviours in technology adoption. According to TRA, the unique behavior of an individual is determined by one's behavioral intention (BI) to act on the behavior, and it is performed in conjunction with an individual's attitude (A) and subjective norm (SN) of the behavior that is being performed. Attitude is the result of what the person believes about the action that is being performed and the expected result. Subjective norm (SN) is the result of an individual's response to the perceived expectations of his or her peer group and his belief that he must comply with those expectations. TRA addresses a person's internal psychological variables by which multiple external variables are studied. IT researchers have relied heavily on this theory to lay the groundwork for a better understanding of why users adopt technological innovations.

TRA was criticized for neglecting the importance of social factors that in real life could be a determinant for individual behaviour (Grandon & Peter P. Mykytyn 2004; Werner 2004). Social factors mean all the influences of the environment surrounding the individual (such as norms) which may influence the individual behaviour (Ajzen 1991). To overcome TRA's weakness, Ajzen (1991) proposed an additional factor in determining individual behaviour in TPB (Figure 2), which is Perceived Behavioural Control. Perceived behavioural control is an individual perception on how easily a specific behaviour will be performed (Ajzen, 1991). Perceived behavioural control might indirectly influence behaviour. The Theory of Planned Behavior (TPB) was the follow on work by (Icek Ajzen, 1985, 1987) "Intentions to perform behaviors of different kinds can be predicted with high accuracy from attitudes toward the behavioral subjective norms and perceived behavioral control; and these intentions, together with perceptions of behavioral control, account for considerable variance in actual behavior. Attitudes, subjective norms and perceived behavioral control are shown to be related to appropriate sets of salient behavioral, normative, and control beliefs about the behavior, but the exact nature of these relations is still uncertain."

Ajzen theory is rooted in the psychological exploration of human behavior and all of the intricacy that is involved in understanding a person's actions. The Concepts dealing with "behavioral dispositions such as social attitude and personality trait have played an important role in these attempts to predict and explain human behavior" (Ajzen, 1988; Campbell, 1963; Sherman & Fazio, 1983) According to

TPB, behavior is determined by the intention to perform the behavior. Intention is predicted by three factors: attitude towards the behavior (A), subjective norms (SN), and perceived behavioral control (PBC).

TRA was developed to examine the relationship between attitudes and behavior (Ajzen 1988; Fishbein & Ajzen 1975; Werner 2004). There are two main concepts in TRA: “principles of compatibility” and the concept of “behavioral intention” (Ajzen 1988; Fishbein & Ajzen 1975). Principles of compatibility specify that in order to predict a specific behavior directed to a specific target in a given context and time, specific attitudes that correspond to the specific target, time and context should be assessed (Ajzen 1988; Fishbein & Ajzen 1975). Behavior intention indicates how much effort an individual would like to commit to perform such behavior. Higher commitment is more likely to mean that behavior would be performed (Fishbein & Ajzen 1975).

Attitudes and subjective norms determined Behavior intention (Ajzen 1988; Fishbein & Ajzen 1975). ‘*Subjective norm ‘refers to the individual’s subjective judgment regarding others’ preference and support for a behavior* (Werner 2004). However, an attitude refers to the perception of individuals (either unfavorable or favorable) toward specific behavior (Werner 2004).
TRA was criticized for neglecting the importance of social factors that in real life could be a determinant for individual behavior Grandon & Peter and Mykytyn (2004). *Social factors mean all the influences of the environment surrounding the individual (such as norms) which may influence the individual behavior* (Ajzen 1991).

Theory of Reasoned Action (TRA)

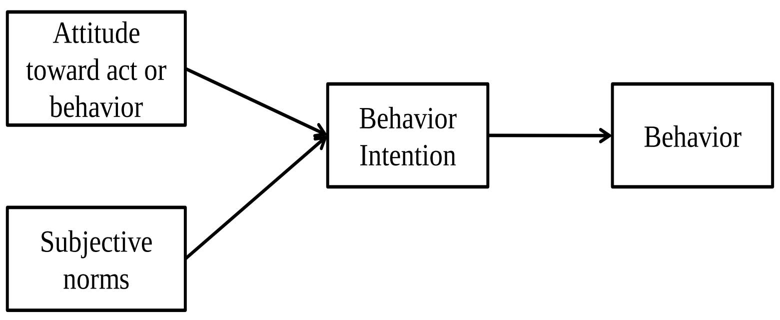

Figure 2.1.1
Theory of Reasoned Action (TRA) (Fishbein & Ajzen 1975)

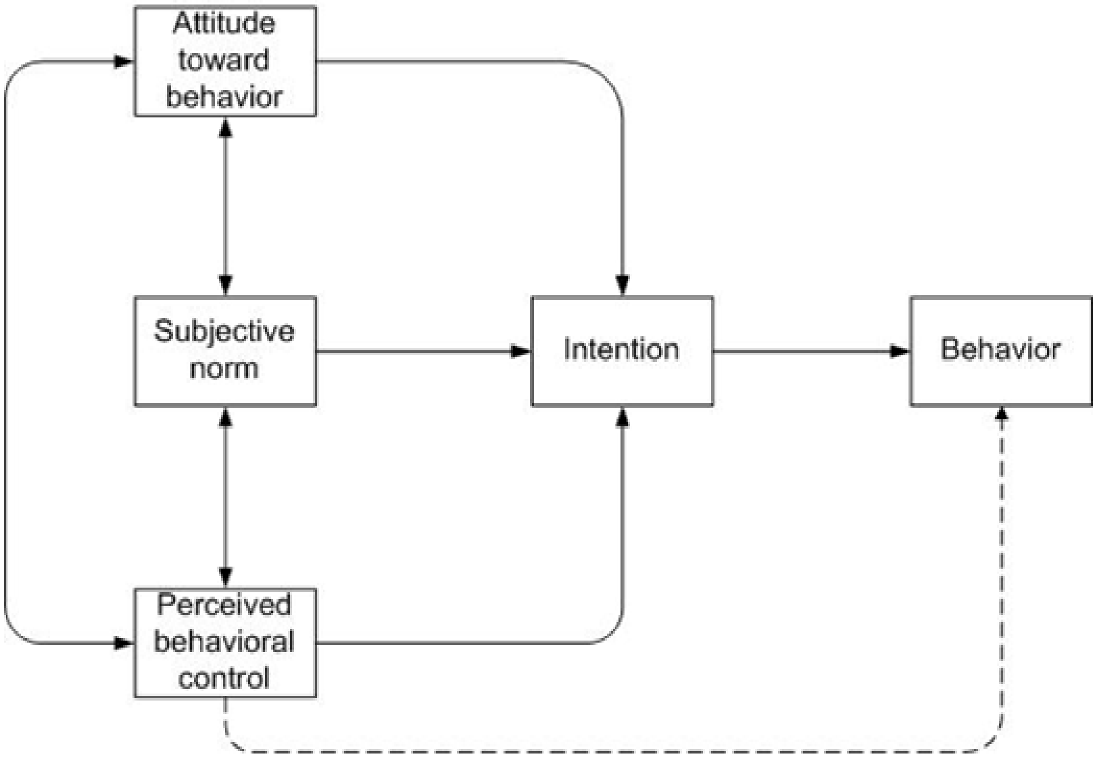

Figure 2.1.2
Theory of Planned Behavior (adopted from Ajzen 1991)

2.8.2 Technology acceptance model TAM1

In the original technology acceptance model, TAM had the following components: PU, PEOU, AT, BI, and actual use (U). Thus on the basis of the five components present and taking into account the structure of the model, 10 relations could potentially be examined: (1) PEOU–PU; (2) PU–AT; (3) PEOU–AT; (4) PU–BI; (5) PEOU–BI; (6) AT–BI; (7) AT–U; (8) BI–U; (9) PEOU–U; and (10) PU–U. In its original form (Figure 2.2.1), TAM included both AT and BI as in TRA. The ultimate objective of TAM was to predict use.

However, in the external variables, TAM postulates that external variables intervene indirectly by influencing PEU and PU. Figure 2.2.2 presents the external variables considered. We note that there is no clear pattern with respect to the choice of the external variables considered.

Measures of Perceived Usefulness (PU) and Perceived ease of use PEOU: Davis, in his study of PU, proposed a six items measurement tool. The six items include the four items most commonly used: (1) using (application) increases my productivity; (2) using (application) increases my job performance; (3) using (application) enhances my effectiveness on the job; and (4) overall, I find the (application) useful in my job. I find the (application) easy to use Perceived ease of use (PEOU): We observe that four items are more frequently used: (1) learning to operate (the application) is easy for me; (2) I find it easy to get the (application) to do what I want to do; (3) the (application) is rigid and inflexible to interact with; and (4) overall.

Technology Acceptance Model TAM

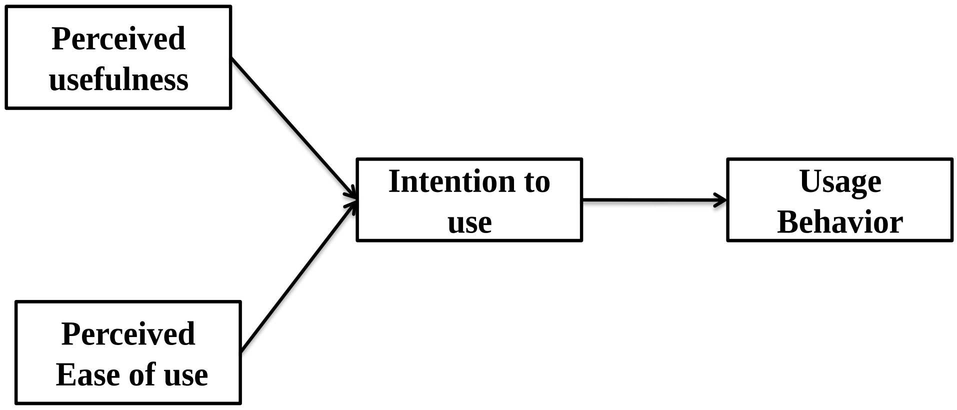

Figure 2.2.1
Technology Acceptance Model (TAM) (Davis, 1993).

Technology Acceptance Model TAM

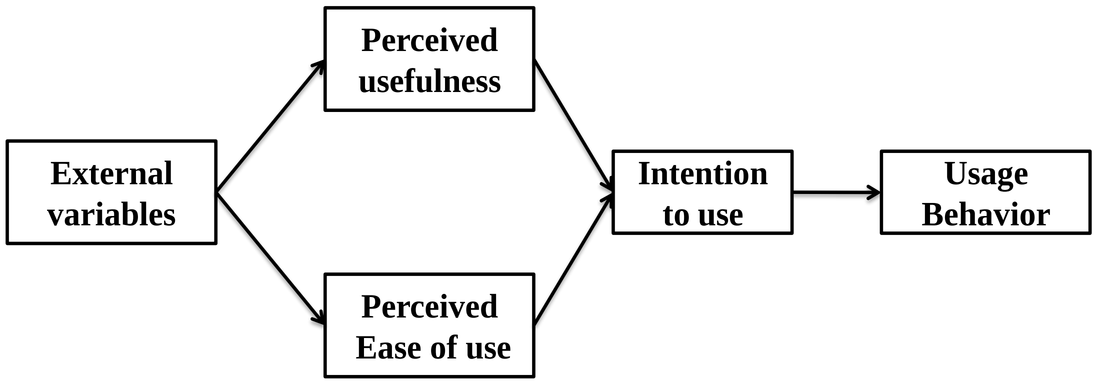

Figure 2.2.2
Technology Acceptance Model (TAM) 1996

2.8.3 Technology acceptance model TAM2

In TAM, Davis (1993) proposes that perceived ease of use and perceived usefulness are important factors to influence user acceptance and user's attitude towards the system. Davis (1989) defines perceived usefulness as "the degree to which a person believes that using a particular system would enhance his job performance" and defines perceived ease of use as "the degree to which a person believes that using a particular system would be free from effort."

Venkatesh and Davis (2000) extended the original TAM model to TAM2 to explain perceived usefulness and intention to use by highlighting the cognitive instrumental processes and social influence process (figure 2.3). In TAM2, the social influence process highlights the impact of subjective norm, defined as a "person's perception that most people who are important to him think he should or should not perform a behavior towards the usage of the technology", voluntariness, and image factor on user acceptance of a new system. The cognitive instrumental process in TAM 2 highlights the individual's job relevance and output quality. It has also been found that demonstrability and perceived ease of use are other important determinants of user acceptance.

Three criteria were suggested for comparing TAM and TPB models. The first was their ability to predict intention to use a system. Clearly, both TAM and TPB explain intention quite well. Although TAM explained more variance than TPB, the difference is not large enough to conclude that one model is better than the other on purely empirical grounds. The second criterion was the value of the information provided by the models. TAM supplies very general information about ease of use and usefulness. TPB delivers more specific information. The third criterion was the cost of using the models. TAM is easier to use than TPB.

There are three main differences between TAM and TPB. The first is their varying degree of generality. The second is that TAM does not explicitly include any social variables. The third is that the modes treat behavioral control differently. (Mathieson, 2001). TAM assumes that beliefs about usefulness and ease of use are always the primary determinants of use decisions. While TPB uses beliefs that are specific to each situations. The model does not assure that beliefs that apply in one context also apply in other contexts. The second major difference between TAM and TPB is that TAM does not explicitly include any social variables. These are important if they capture variance that is not already explained by other variables in the model. However, the social variables in TPB may still capture unique variance in intention. The third difference is TAM and TPB treatment of behavioral control, referring to the skills, opportunities, and resources needed to use the system. (Mathieson, 2001). TAM provides a quick and inexpensive way to gather general information about individuals' perceptions of a system (Mathieson, 2001).

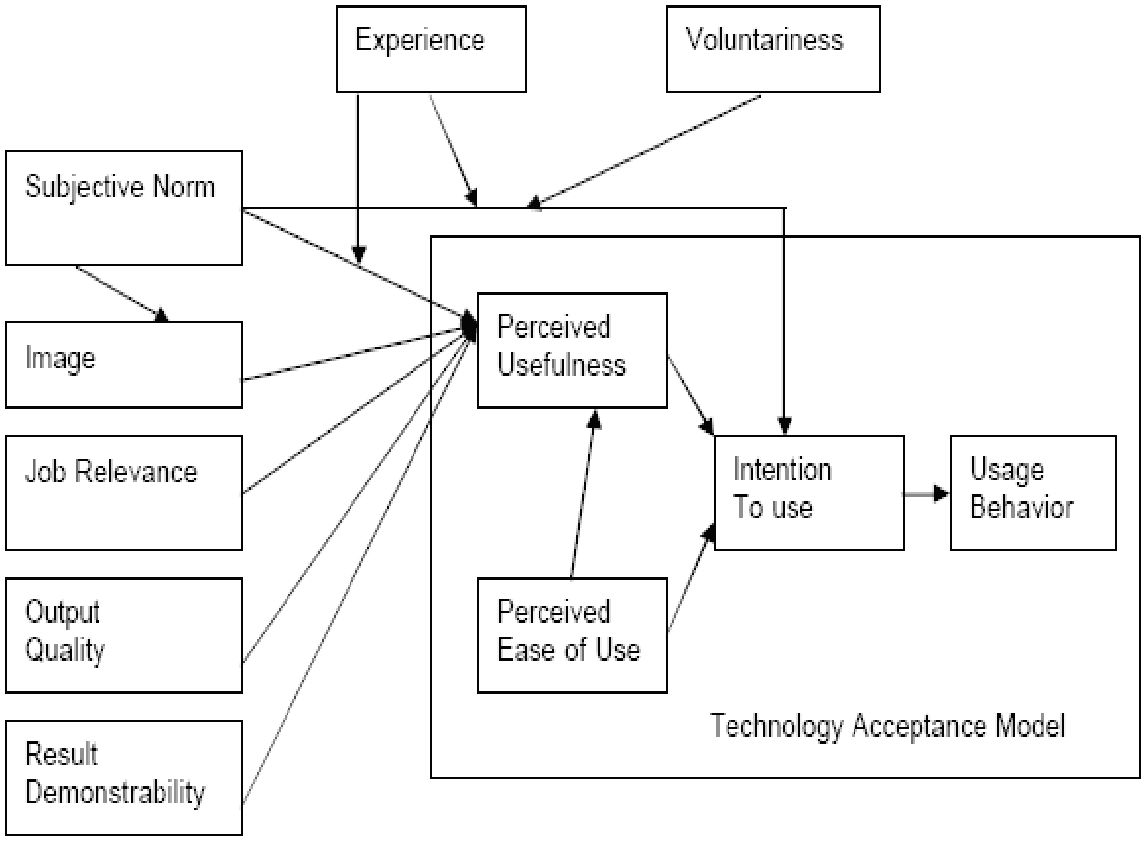

Figure 2.3
Technology Acceptance Model TAM2 (Venkatesh & Davis, 2000)

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

Venkatesh et al. (2003) examined the differences and the similarities of eight technology acceptance theories. Based on their analysis, they formulated the Unified Theory of Acceptance and Use of Technology (UTAUT). The eight models reviewed are: theory of reasoned action, technology acceptance model, a model combining the technology acceptance model and theory of planned behavior, theory of planned behavior, motivational model, model of personal computer utilization, social cognitive theory, and innovation diffusion theory.

The Unified Theory of Acceptance and Use of Technology (UTAUT) proposed by Venkateshet al. (2003) extends TAM to take into account several new constructs (Performance Expectancy, Effort Expectancy, and Social Influence) that bear significant influence on behavioural intention and ultimately usage of technologies (see Figure 2.4).

The model was designed based on conceptual and empirical similarities across eight prominent competing technology acceptance models: Social Cognitive Theory (Bandura 1986; Compeau & Higgins 1995; Compeau &Higgins 1995; Compeau, Higgins & Huff 1999).The Theory of Reasoned Action (TRA) (Fishbein & Ajzen1975); Technology Acceptance Model (TAM) (Davis 1989; Davis, Bagozzi & Warshaw 1989); the Theory of Planned Behavior (TPB) (Ajzen 1991); the Motivation Model (MM) (Davis, Bagozzi & Warshaw 1992); the Combined TAM and TPB (Taylor & Todd 1995); Innovation DiffusionTheory (IDT) (Rogers 1995); and the Model of PC Utilization (MPCU) (Thompson, Higgins & Howell 1991; Triandis 1977).

The original TAM model was extended by Venkatesh and Davis to explain perceived usefulness and behavior intentions to use in terms of social influence and cognitive instrumental processes. (Venkateshand Davis, 2000). They formulated the Unified Theory of Acceptance and Use of Technology (UTAUT). Venkatesh and Davis said that there are four factors play a significant role as direct determinants of user acceptance and usage behaviour: effort expectancy, performance expectancy, facilitating conditions and social influence. Subjective norm can be defined as the technology user's belief that most of his/her important others believe he/she should or should not perform the behaviour to accept the technology. Voluntariness is the context in which the user will accept technology voluntarily. This means there is no obligation on the user to accept the technology. Image can be defined as the degree to which accepting new technology is perceived to enhance the person's status in one's social system e.g. inside the person's enterprise.

UTAUT encompasses two additional theoretical mechanisms by which the subjective norm can influence intention indirectly through perceived usefulness: internalization and identification. UTAUT theorizes that subjective norm will positively influence image because, if important members of a person's social group at work believe that he or she should perform behaviour to accept the new technology it will lead the user to accept this new technology (Venkatesh & Davis, 2000).

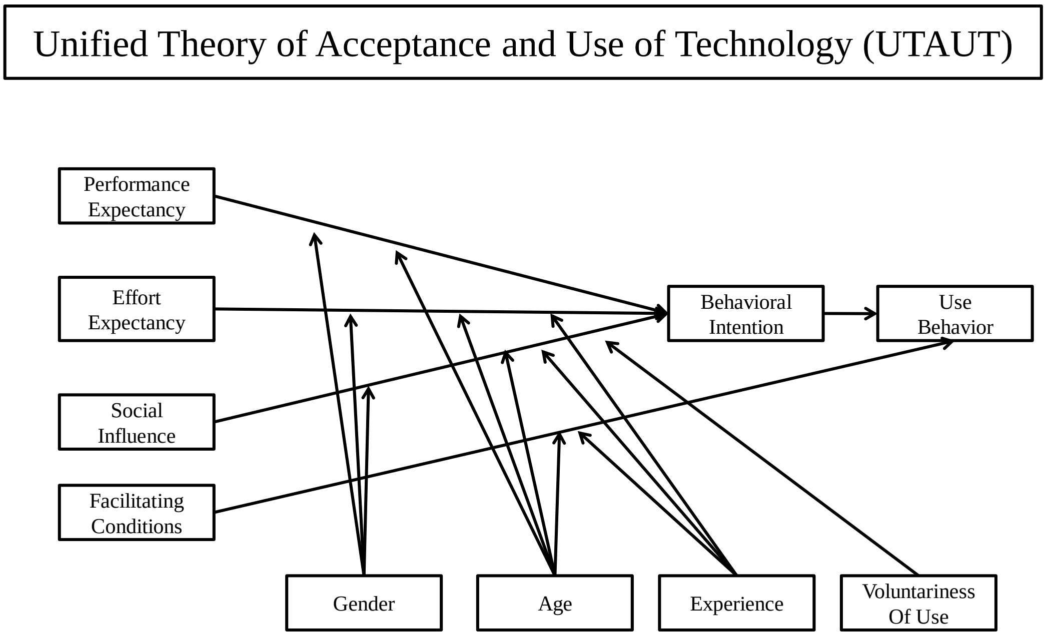

Figure 2.4
The Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003)

2.9 Framework

In this study, Figure 2.5 presents the relations between the factors were studied in this study, the dependent variable is the Intention behavior to use. Perceived usefulness and perceived ease of use are mediators for the relation between the dependent variable and the independent variables. Independent variables contain four categories factors are 1- Individual differences such as Self-efficacy. 2- System characteristic such as Information quality. 3- Social characteristic such as subjective norms and organization culture. 4- Institutional characteristic such as top management support and government support.

Figure 2.5 showed that the factors in TAM, TAM2 and UTAUT models are included into four factor groupings of the proposed framework. 1- The user perception, ease of use and the usefulness of the system from TAM. 2- Self-Efficacy was included into the individual differences factor grouping of the framework from TAM. 3- The social influence aspect such as subjective norms was adopted from TAM2 and organization culture was adopted from UTAUT. 3- Information quality was included in the system factor grouping from TAM2. 4- The facilitating conditions, Top management support and Organizational support factors were included in the institutional factor groupings from UTAUT.

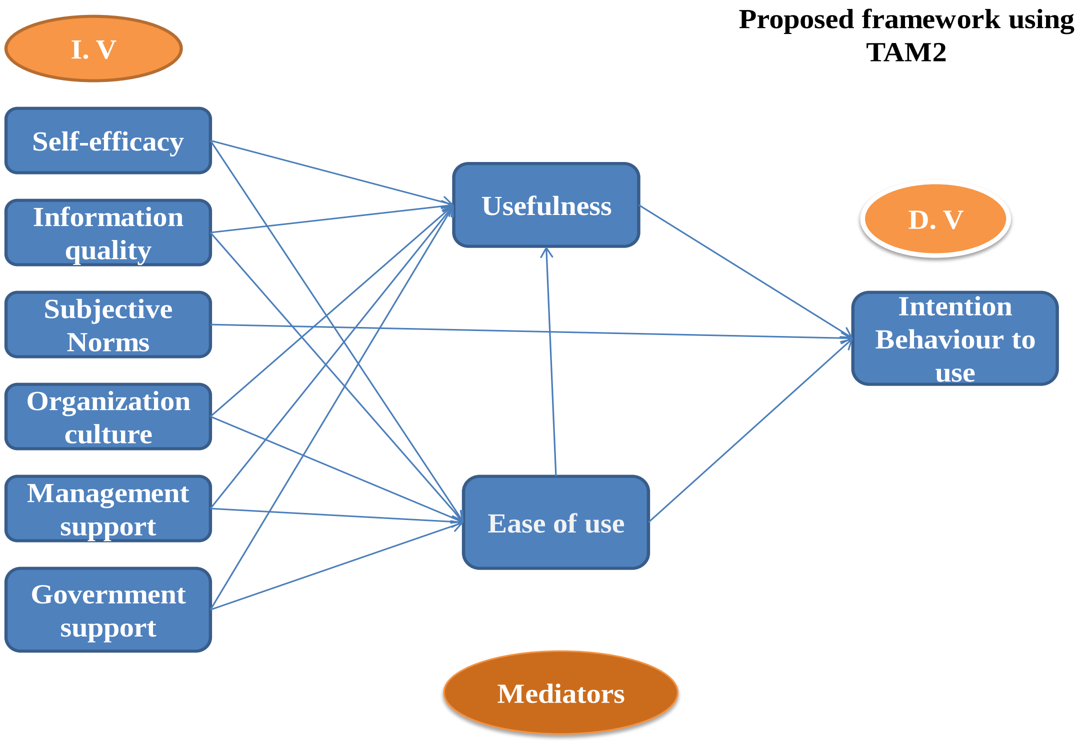

Figure 2.5
Proposed frame work of this study using TAM 2

2.10 Summary

The importance of Information technology for the employee's and managers in the public sector drives the policy makers to put in their consideration the importance of the factors that affecting the acceptance of the information technology to enhance the productivity and the effectiveness of the technology in the public sector, during the investing in the new technology.

Therefore, many theories appeared to provide the tools to examine the factors affecting the acceptance of the information technology. From these theories, Technology Acceptance Model (TAM) which offered different models can be adopted to examine the usability factors of the employees and managers in the public sector.

In this chapter, the study illustrated some of the factors that could affect the acceptance of the information technology in the Yemeni public sector, these factor such as information quality, self-efficacy, top management support, organization culture, government support , subjective norms perceived ease of use, perceived usefulness and intention behavior to use.

Technology acceptance model (TAM) and the unified theory of acceptance and use of technology (UTAUT) were used to examine the factors affecting the intention and acceptance of the employees and managers for the technology, putting in the consideration the organizational culture and government support as factors effecting the in the acceptance of the technology.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter is going to review the research design and methodology used to answer the research questions. First, it presents the variables for testing the research questions and states the main hypotheses. Next, the research methodology is described in detail, including sampling, instruments, data collection, and the data analysis method.

3.1 Research Design

This study is about the usage of information technology among government managers and employees at work (in Yemeni government utilities). Specifically, this study is to determine if Technology Acceptance Model (TAM2) could explain the effects of external factors on perceived usefulness, perceived ease of use, intention to use toward the actual usage for the information technology. The external factors which did not included in the orgenal technology acceptance model TAM considered are individual characteristics (self-efficacy), system characteristics (information quality), institutional characteristics (top management support and government support) and social characteristics (social norms and organization culture). Toward this purpose, a survey was employed on which the government organizations that had spent considerable amount of money to improve the performance of the managers and employees through the adoption and use of information technology.

3.2 Operational Definition of Variables and Hypotheses

3.2.1 Intention to use

Intention to use is a variable which refers to the intention of an end-user to use the new technology (Seymour, Makanya, & Berrange, 2007). In other words, it is the probability of using a particular system. Technology acceptance model (TAM) proposes that intention to use affects and causes actual use of a new system. Similarly, in Aversano’s (2005) study that used TPB confirmed that intention to behave determines actual usage. So, the intention to use the technology determines the relations of actual use of the system. However, latest studies confirmed that intention to use technology is merely a mediating factor (e.g. Vankatesh & Davis, 2000; Yalcinkaya, 2007).

3.2.2 Perceived ease of use

In TAM, perceived ease of use is defined as the degree to which an individual believes that using a particular system is free of effort (Davis, 1989). In this study, this variable can be defined as the managers’ and employees’ perceptions about the lack of effort when using the new system. Perceived ease of use has an effect on both intention to use and perceived usefulness, despite the fact that some studies found that perceived ease of use has no influence on intention to use (Vankatesh & Davis, 2000; Yalcinkaya, 2007).

In Taracan , Varol and Toker , (2010) attempted to investigate the factors that affect the intention to use Information Technology by academicians. They found perceived usefulness as having a direct influence on intention to use and perceived ease of use as having a significant influence on an academician's intention to use IT. The study showed that perceived ease of use has a direct positive effect on perceived usefulness. Besides that, perceived ease of use has a mediating impact on intention to use through perceived usefulness. Moreover, among the variables in TAM, perceived usefulness has a greater effect on intention to use more than perceived ease of use.

As mentioned, there are some studies that found perceived ease of use as having more effect than perceived usefulness in TAM. For example, a study conducted by Brown (2002) aimed to examine perceived ease of use for web-based learning environment in developing countries and non-developed countries. The study found that ease of use predicts usefulness and actual usage but usefulness does not predict actual usage.

Some studies found that perceived ease of use has a significant effect on intention to use the system (Pikkarainen, Pikkarainen, Karjaluoto, & Pahnila, 2004). This study assumes that managers and employees perceive the system is useful when they perceive it to be easy to use. So for this reason, the following is hypothesized:

H1: Perceived ease of use has a positive effect on the intention to use the system.

H2: Perceived ease of use has a positive effect on perceived usefulness of the system.

3.2.3 Perceived usefulness

Perceived usefulness refers to the degree of which the user believes that the use of a particular system will support his work" (Davis, 1989). It is related to effectiveness on the job, to more productivity at work, such as spending few time or money, and to relative motivation for usage of that particular technology (Yang & Yoo, 2004).

In this study, perceived usefulness refers to the perception of managers and employees on the usefulness of using a particular system. Usefulness has been tested relative to the system's ability to increase performance, productivity, and effectiveness. Many empirical studies have found that perceived usefulness is an important determinant of intention to use (Chismar & Patton, 2002; Ggoeke, 2006; Kiraz & Ozdemir, 2006; Kishore, McLean, 2001; Vankatesh & Davis, 2000).

Li, Hess, McNab, and Yu (2009) aimed to investigate the influence of organizational cultur values on acceptance of a personal web portal by users in China and the United States. The study found that perceived usefulness and normative beliefs have positive effects on intention.

Along similar lines, Vathanophas, Krittayaphongphun, and Klomsiri (2008) aimed to show how TAM is used to measure the acceptance of Internet use by naval officers in the Naval Department in Thailand. The study found that perceived ease of use and perceived usefulness have a significant effect on user’s intention. Perceived ease of use has a significant correlation with perceived usefulness and it showed a significant correlation between prior experience and perceived ease of use. There is also a significant correlation between job relevance and perceived usefulness. But training was found not to have any significant correlation with either perceived usefulness or perceived ease of use. For this reason, this variable is added into this study. Thus, the following is hypothesized:

H3: Perceived usefulness has a positive effect on intention to use the system.

3.2.4 Individual characteristics of self-efficacy

Self-efficacy is defined as the judgment of the user's ability to perform the computer related task (Park et al., 2006; Salylianoa & Jackson, 2007). Self efficacy has been shown in several studies to influence perceived ease of use of the technology (Agarwal et al., 2000; Kiraz & Ozdemir, 2006; Venkatesh, 2000). Self-efficacy of the user is a better determinant of acceptance of computer technology than demographic factors (e.g. age, gender, and education) through perceived usefulness and perceived ease of use (Park et al., 2006). Therefore, self-efficacy is considered the determinant for perceived ease of use and perceived usefulness (Kiraz & Ozdemir, 2006).

In a study conducted by Teo (2009) aimed to build a model to predict the level of technology acceptance by pre-service teachers at a teacher training institute in Singapore, he found that computer self-efficacy has a direct effect on behavioral intention to use technology and perceived ease of use. He also reported that technological complexity and facilitating conditions affect intention to use indirectly.

He further demonstrated that computer self-efficacy has more impact on perceived usefulness and less effect on perceived ease of use. So the hypothesis is as follows:

H4: Self-efficacy has a positive effect on ease of use of the system.

H5: Self-efficacy has a positive effect on usefulness of the system.

3.2.5 System characteristics of information quality

Information quality is the type, level of detail and variety of information which are determined by the system's design and development phase while timeliness, accuracy, and reliability result from the system operations. In other words, information quality refers to the content and form of report. While content includes accuracy, relevance, adequacy, and understandability of report contents, form includes quality of format, timeliness of reports, manner of presentation, and result of information (Ahn, Ryu & Han, 2007; Staples, Wong, & Seddon, 2002).

Information quality has a positive impact on perceived ease of use and usefulness of a Website. A study was conducted in Malaysia by Mohd, Syed Mohamad, and Zaini (2005) to identify the relation between information quality and the acceptance of doctors of the Electronic Medical Record System (EMR) in a Malaysian hospital. The study found that information quality has a significant impact on perceived usefulness and perceived ease of use toward using the system. The study concluded that it is important for system designers to effectively communicate with the end users to make sure that the system requirement to provide information quality is developed; a notion supported in the study conducted by Bani-Ali and Money (2005).

Information quality provided good explanatory power for the new software usage. Their result was confirmed by Staples, Wong, and Seddon (2002), who examined the effects of the implementation of a new system on its users, with a focus on the relationship between pre-implementation expectations and their perceived benefits based on post-implementation experience. The study's finding confirmed that system usefulness, ease of use and information quality have strong relations to information system success and user satisfaction. So the hypothesis is:

H6: Information quality has a positive relationship with perceived ease of use of the system.

H7: Information quality has a positive relationship with perceived usefulness of the system.

3.2.6 Social factors of subjective norms and organization culture

Subjective norm refers to the person's perception about what people who are important to him think that he should or shouldn't do (Park et al., 2006).

Subjective norms have a strong influence on user's perceptions. Subjective norms play a strong and complex part in the usage of a software system (Chiasson & Lovato, 2001). People who are close and important to the individuals are like family members, friends, and colleagues. Perceptions are also formed due to influences from experts and media reports (Agarwal, 2000: Merchant, 2007).

Subjective norms have been found to be an important factor of intention to use information technology. Subjective norm did not influence men in using the system but influence women in the beginning of the introduction of the system but after a short time there is no effect on the women's intention to use the system despite the increase in experience (Venkatesh & Morris, 2000). So when supervisors or peers say that using the particular technology will be more useful at work, this may affect the perception of the user. Therefore, subjective norm is considered a determinant for intention to use and perceived usefulness.

Chung, Skibniewski, and Kwak (2008) examined critical factors that need to be considered to ensure successful ERP system implementation in the construction industry. The study found that subjective norms have a significant relation with perceived usefulness, and perceived usefulness has a significant relation with perceived ease of use. Perceived usefulness and perceived ease of use were found to have a significant relation with intention to use and perceived ease of use has indirect relation with the intention to use through perceived usefulness. Additionally, there is a strong effect for subjective norm on intention to use and perceived usefulness, which was confirmed by Schepers and Wetzels (2007). Hence, the following hypotheses are offered:

H8: Subjective norm has a positive effect on intention to use a particular system.

Organization Culture is another variable of social factors considered in this study. Culture is defined as (a) something shared by all or almost all members of some social group, (b) something that the older members of the group try to pass on to the younger members, and (c) something that shapes behavior, or that structures one's perception of the world (Merchant, 2007). This research will use the following dimensions of culture: power distance, masculinity/femininity, individualism/collectivism and uncertainty avoidance (Mooij , Hofstede, 2002; Zakour, 2004).

Merchant (2007) carried out a study aimed at investigating the relationship between the cultural/work values of the people involved and IT adoption among three cultures using technology acceptance model TAM. The study found that culture is a crucial element that determines the acceptance or rejection of technology. He further revealed that the French and the Americans would most likely adopt a new innovation, but the Chinese were less enthusiastic to adopt as fast as the French and the Americans. Brown et al. (1998) suggest in their study the need to consider cultural resistance to technologies. Yoon (2009) confirmed the importance of organizational culture effects on the perceived usefulness and perceived ease of use towards the acceptance of the information technology. Therefore, organization culture is considered an important determinant for perceived usefulness and perceived ease of use towards the acceptance of the information technology. So, the following hypotheses are offered:

H9: Organization Culture has a negative effect on the perceived ease of use toward the usage of a particular system.

H10: Organization Culture has a negative effect on perceived usefulness toward the usage of a particular system.

3.2.7 Institutional characteristics of Top management support

Management support refers to the degree of understanding top management has on the importance of IS function and of its involvement in the activities (Masrek, Karim, & Hussein, 2007; Nathan, Apigian, Nathan, & Tu, 2004). Another definition is the degree to which an individual believes that an organization and technical infrastructure exists to support use of the system (Venkatesh, Morns, Davis, & Davis, 2003). This study adopts both definitions. Hence, top management support comprises the degree to which the top management understands the importance of the technology and the degree of organizational and technical support for the use of the system.

A study by Venkatesh and Davis (2000) found that system availability is considered a determinant of technology acceptance. If the users believe that enough resources and computers are available when they need them, the end users are likely to use that particular technology. Hu et al. (2002) found significant relationship between intention to use and availability. They examined the effect of facility of the system on the intention behaviour to use of the government managers and employees. Nathan, Apigian, Nathan, and Tu (2004) studied the relationship between top management support (TMS) and information system. The study found that information system as the organization's strategy for development and for its competitive advantage can be achieved by top management support. They also found that most of the problems in developing, planning, and use of the technology is because of the failure of the top management to manage and support the usage of the technology. Indirect support by top management is given in the form of hiring vendors and consultants to undertake efforts of developing the system in the organization while the direct support is by positioning the IS in the organization for planning and developing.

Wang , Chen (2006) examined the quality recognition of medical information systems in Tzu-chi hospital in Taiwan and explored the factors that discourage physicians from using medical information system. The study found that computer training, government support, and organization support factors could prevent the end-user from using a particular system. So, the following hypotheses are presented:

H11: Top management support for a particular system has a positive effect on perceived ease of use of that system.

H12: Top management support for a particular system has a positive effect on perceived usefulness of that system.

3.2.8 Institutional characteristics of Government support

Since the government and its utilities are considered the management in the country, the definition of management support is used to reflect government support. Management support refers to the degree to which the top management understands the importance of information system function and the content to which it is involved in the activities (Masrek, Karim, & Hussein, 2007; Nathan, Apigian, Nathan, & Tu, 2004). So, in this study, government support refers to the degree to which the government understands the importance of IS function and the content to which it is involved in the activities.

A study conducted by Hu et al. (2005) found a significant relationship between the facility of the system and the intention to use among government managers. Wang and Chen (2006) examined the quality recognition of medical information systems in Tzu-chi hospital in Taiwan and explored the factors that discourage physicians from using medical information system. The study found that computer training, government support, and organization support factors could prevent the end-user from using a particular system. So, when computers are available, managers and employees will use them to facilitate their work. Therefore, the following is hypothesized:

H13: Government support for a particular system has a positive effect on perceived ease of use of the government managers and employees toward using the information technology.

H14: Government support for a particular system has a positive effect on perceived usefulness of the government managers and employees toward using the information technology.

3.3 Population and Sampling

The sample was drawn from managers and employees in government organizations who are currently using computers or whose work is related to software or system. To draw a sample that represents the population, stratified random sampling was used. The usage of this method is justified by the fact that it is more efficient and helpful for the assessment of the needed data which related to the information technology to achieve representativeness of the sample were employed (Sekaran, 2006). Then, simple random sampling was used to select samples from the managers and employees in the government utilities.

To this effect, the target population of this study is managers and employees working in 57 government utilities in the Republic of Yemen. A survey was carried out among managers and employees located at the ministry headquarters in Sana'a. According to the Civil Ministry, there were 34,261 government employee in 2010, out of which 22,101 were male, and 12,160 female. According to Sekaran (2006), with 34,261 as the size of the population, the target sample size is 380. Such sample size is enough to administer a reliable analysis in structural equation modeling. For more details about the population, refer to (Appendix A1).

Because of possible low response rate due to use of surveys, the researcher decided to distribute 760 questionnaires instead of 380. The questionnaires were distributed in the government utilities which located in the capital Sana'a.

The function of the stratified random sampling was that dividing the total number of the employees in each government utility in the total number of the employees in the government in order to get the rate of the employees in each utility, and then multiply the rate of each government utility in the total number of the target distributed questionnaires in order to get the number of questionnaires that should distribute in each utility, the Appendix D shows the the distribution of questionnaires in various government departments in Sana'a and the total employees number in each utility.

Right after that, simple random sampling was used to choose the subjects (managers and employees) in the sample randomly; all the subjects in the sample have the same probability to be chosen.

3.4 Data Collection Instrument - Questionnaire

The main research design of this study is survey. The main reason for choosing the survey questionaire method was that it provides high predictive value for assessing the efficiency of the individuals in the socities, especially when the target subject under study is related to individual's perception, belief and opinion (Yalcinkaya et al, 2007). Data on individual cognitive perceptions, in this study, like belief and intention of the managers and employees in the public sector were tested via a research survey.

Table 3.1
Comparison between qualitative vs quantative methods

	QUALITATIVE RESEARCH	**QUANTITATIVE RESEARCH**
Purpose	•To describe and explain (behaviors, trends or relations) • To explore and interpret • To build theory •To explore areas characterized by no/ limited prior research • Is process-orientated • To construct social reality	•To explain and predict (quantities, degrees or relations) • To confirm and validate • To test theory • To generalize from a sample to a population • Is outcome-orientated • To measure objective facts
NATURE	• Holistic • Unknown variables • Flexible guidelines • Emergent design • Context-bound	• Focused • Known variables • Established guidelines • Static design • Context-free

	• Personal view/Values are involved • Authenticity is key • Informative, small sample	• Detached view/Value free • Reliability is key • Representative, large sample
DATA COLLECTION	• Observations, interviews	Standardized instruments (Surveys and experimental designs)
REASONING	• Usually inductive analysis	• Usually deductive analysis
DATA ANALYSIS	• Content analysis	• Descriptive and inferential statistics
COMMUNICATION OF FINDINGS	• Words • Narratives, individual quotes • Personal voice, literary style	• Numbers • Statistics, aggregated data • Formal voice, scientific style

Resource: Alsohybe, (2007)

However, Bani-Ali and Money (2005) recommended combining qualitative data such as interviews and open-ended questions with senior experts with quantitative data to gain more insight and also to enrich the analysis as showed in the comparsion in table 3.2 . Qualitative approach focuses on understanding the meaning of data gathered from people's experiences (Cooper & Schindler, 2003). Quantitative methods are supported by statistical data and put emphasis on comprehensive reasoning; it is measurable, and the results can be reliable, replicated, and validated. In this case the use of quantitative method may indicate a relationship that may not be significant to the researcher; it can also keep the researcher from being carried away by false impressions in qualitative data (personal interviews). The qualitative approach can be used to understand the rationale or theory explaining the relationship revealed by quantitative approach (Hoepfl, 1997).

In the survey, questionnaires were distributed amongst employees and managers randomly selected in the government organizations to gain a better understanding of the factors that affect the acceptance of these target users of information technology (Alsohybe, 2007).

Also, the Quantitative method is preferred when the topic under study is testing the generlized of theory or testing hypotheses relation between two antecedents (Hoepfl, 1997). In this study, cognitive perceptions (the beliefs and the intention) of the managers and employees in the government sector of the republic of Yemen were targeted and evaluated. Therefore, the survey questionaire method was conducted to collect the perceptual data from the respondents (managers and employees).

The questionnaire consists of items to measure ten constructs: perceived ease of use, perceived usefulness, attitude toward information technology, intention to use, computer self-efficacy, organization culture, subjective norms, information quality, top management support, and government support. The following section will describe the instruments individually.

3.5 Intention to Use

System actual use instrument is adopted from Yalcinkaya (2007) which consists of five items. Most of the previous studies implement these instruments which adopted from the original TAM theory. Also, the use for these instruments was due to the high responses in the previous studies such as Yalcinkaya et al, (2007) These items are measured on a five-point scale with ‘1’ "Strongly Disagree," ‘2’ "Disagree," ‘3’ "Neither Agree or Disagree," ‘4’ "Agree," and ‘5’ "Strongly Agree." The five items are:

1. Assuming I have access to the system, I intend to use it.
2. Given that I have access to the system, I predict that I would use it.
3. In my work, if I have access to the system, I want to use it as much as possible.
4. I prefer to use the system even though I can do my work with other tools.

3.6 Usability Instrument

The usability instrument measures two constructs: manager’s perceived ease of use and perceived usefulness of particular system. Perceived ease of use and perceived usefulness were asked based on the questions adopted from Kiraz and Ozdemir (2006). The adoption for these instruments was due to the high responses in the previous study Kiraz et al, (2006) which adopt these instruments from Legris et al (2003). Ten questions were used to ask perceived usefulness of technology, and seven questions perceived ease of use. These items are measured on a five-point scale with ‘1’ "Strongly Disagree," ‘2’ "Disagree," ‘3’ "Neither Agree or Disagree," ‘4’ "Agree," and ‘5’ "Strongly Agree."

The items to measure perceived usefulness are as follows:

1. Computers enhance my work effectiveness.
2. Computers increase my performance in my work.
3. Computers increase my productivity in my work.
4. Overall, I found computers to be useful in my work.
5. Computers enable me to accomplish tasks more quickly.
6. Computers make my work easier.
7. Computers give me greater control over my work.
8. Computers improve the quality of the work I do.
9. Computers support the critical aspects of my work.
10. Computers allow me to accomplish more work than otherwise possible.

The items to measure perceived ease of use are as follows:

1. My interaction with the computers is clear and understandable.
2. Interacting with the computers is often frustrating.
3. Learning to operate computer applications is easy for me.
4. I find it easy to get the computers to do what I want to do.
5. Overall, I find computers easy to use.
6. It is easy for me to remember how to perform tasks using the computers.
7. The computers are rigid and inflexible to interact with.

3.7 Individual characteristic - Computer Self-efficacy Instrument

Computer self-efiicacy instrument was adopted from Bani Ali, Anbari, & Money (2008), and Venkatesh, Morris, Davis, & Davis, 2003), who measured managers' beliefs about their computer skills. The questions included work self-efficacy in information technology skills. Managers answer the questions based on the perception about their skills in work content and information technology. Ten items were used, and measured on a five-point scale with '1' "Strongly Disagree," '2' "Disagree," '3' "Neither Agree or Disagree," '4' "Agree," and '5' "Strongly Agree." The items asked are as follows: "I could use software…"

1. If someone showed me how to do it first.
2. If someone else had helped me get started.
3. If I had used similar packages before this one to do the same job.
4. If I had a lot of time to complete the job for which the software was provided.
5. If someone else had helped me get started.
6. If I had never used a package like it before.
7. If there was no one around to tell me what to do as I go.
8. If I had only the software manuals for reference.
9. If I had just the built-in help facility for assistance.
10. If I had seen someone else using it before trying it myself.

3.8 System Characteristic - Information Quality Instrument

The information quality instrument was adopted from Ahn, Ryu, and Han (2007) which consists of seven items. These items were adopted in many previous studies such as Aladwani and Palvia, Barnes and Vidgen, Jarvenpaa and Todd, and Palmer. Four IS experts were asked to evaluate these items and make changes to eliminate any repetitive. Besides that, these items scored high factor loading in those previous study. These items are measured on a five-point scale with ‘1’ "Strongly Disagree," ‘2’ "Disagree," ‘3’ "Neither Agree or Disagree," ‘4’ "Agree," and ‘5’ "Strongly Agree." The items are as follows:

1. Has a sufficient content where I expect to find information.
2. Provides complete information.
3. Provides site-specific information.
4. Provides accurate information.
5. Provides timely information.
6. Provides reliable information.
7. Communicates information in an appropriate format.

3.9 Social Characteristic - Subjective Norms Instrument

Subjective norms instrument was adopted from Yalcinkaya et al, (2007) and Venkatesh and Morris (2000). These items were adopted from the original TAM the theory of the acceptance technology and the theory of reasons action TRA (Ajzen 1991; Davis et al, (1989); Fishbein and Azjen, (1975). These items are measured on a five-point scale with ‘1’ "Strongly Disagree," ‘2’ "Disagree," ‘3’ "Neither Agree or Disagree," ‘4’ "Agree," and ‘5’ "Strongly Agree." The items are as follows:

1. People who influence my behavior think that I should use the system.
2. People who are important to me think that I should use the system

3.10 Social Characteristic – Organization Culture Instrument

To measure organization culture, the instrument was adopted from Schrodt (2002), which has 35 items. This study chose these instruments because it focuses in the communication and information flow inside the organization. However, this study used the commen four diminutions in the previous studies for measuring the organization culture individualism/collectivism (2 items), power distance (2 items), masculinity/femininity (2 items), uncertainty avoidance (2 items); each diminution contains two items to measure this diminution. Moreover, the other items used in this study are for the researcher purposes. These items are measured on a five-point scale with ‘1’ "Strongly Disagree," ‘2’ "Disagree," ‘3’ "Neither Agree or Disagree," ‘4’ "Agree," and ‘5’ "Strongly Agree." The items are as follows:

1. In my organization, people I work with are direct and honest with each other.
2. In my organization, people I work with accept criticism without becoming defensive.
3. In my organization, people I work with resolve disagreements cooperatively.
4. In my organization, people I work with function as a team.
5. In my organization, people I work with are cooperative and considerate.
6. In my organization, people I work with constructively confront problems.
7. In my organization, people I work with are good listeners.
8. In my organization, people I work with are concerned abouteach other.
9. In my organization, labor and management have a productive working relationship.
10. This organization motivates me to put out my best efforts.
11. This organization respects its workers.
12. This organization treats people in a consistent and fair manner.
13. Working with this organization feels like being part of a family.
14. In my organization there is an atmosphere of trust.
15. This organization motivates people to be efficient and productive.
16. I get enough information to understand the big picture here.
17. In my organization, when changes are made ,the reason why are made is clear.
18. I know what is happening in work sections outside of my own.
19. I get the information I need to do my job well.
20. I have a say in decisions that affect my work.
21. I am asked to make suggestions about how to do my job better.
22. This organization values the ideas of worker at every level.

23. My opinion counts in this organization.
24. Job requirements are made clear by my superior.
25. When I do a good job my superior tells me.
26. My superior delegate responsibility.
27. My superior is approachable.
28. My superior gives me criticism in a positive manner.
29. My superior is a good listener.
30. My superior tells me how I am doing.
31. Decisions made at the meetings get put into action.
32. Everyone takes part in discussions at the meetings.
33. Our discussions in the meetings stay on track.
34. Time in the meeting is time well spent.
35. Meetings tap the creative potential of the people present.

The 35 items above were to tap six dimensions of organizational culture: individualism/collectivism (items 1-9), power distance (10-15), masculinity/femininity (16-19), uncertainty avoidance (20-23), time perception (monochromic/polychromic) (24-30), and high context/low context (31-35).

3.11 Institutional Characteristic - Top Management Support Instrument

The instrument to measure top management support was adopted from Nathan, Apigian, Nathan, and Tu (2004). Despite that, these instruments did not specifically check for correlation, this study used these instruments because it focuses in the usage of the information system inside the organization and for its clarity to be understood. It has seven items measured on a five-point scale with ‘1’ "Strongly Disagree," ‘2’ "Disagree," ‘3’ "Neither Agree or Disagree," ‘4’ "Agree," and ‘5’ "Strongly Agree." The items are as follows:

1. Top management involvement with IS function is strong.
2. Top management is interested in IS function.
3. Top management understands the importance of IS.
4. Top management supports the IS function.
5. Top management considers IS as a strategic resource.
6. Top management understands IS opportunities.
7. Top management keeps the pressure on operating units to work with IS.

3.12 Government Support Instrument

Since there exists similarity between top management support and government support, therefore, government support instrument was adopted from Nathan, Apigian, Nathan, and Tu (2004). The instrument consists of seven items items measured on a five-point scale with ‘1’ "Strongly Disagree," ‘2’ "Disagree," ‘3’

"Neither Agree or Disagree," ‘4’ "Agree," and ‘5’ "Strongly Agree." The items are as follows:

1. Government involvement with IS function is strong.
2. Government is interested in IS function.
3. Government understands the importance of IS.
4. Government supports the IS function.
5. Government considers IS as a strategic resource.
6. Government understands IS opportunities.
7. Government keeps the pressure on operating units to work with IS.

3.13 Pilot Study

Before the questionnaires were finally distributed to the actual respondents, they were pilot tested first. The need for the pilot test is to revalidate the instruments after the translating the items from the English language to Arabic language to assure the understandabilities for these items. This pilot test was conducted among the employees in the public sector in the republic of Yemen.

Initial reliability analysis was also run for each instrument used. The reliability values for each variable were calculated using Cronbach’s alpha, with all results above 0.7, which is well above the recommended minimum value of 0.7 (Hair, Black, Babin ,Anderson , 2010). For more details, refer to (Appendix A1)

Table 3.2
Initial Reliability of Instruments Used

Variable	No. of items	Reliability coefficient
Intention to use	4	.705
Perceived usefulness	8	.949
Perceived ease of use	9	.695
Self-efficacy	10	.748
Information quality	7	.908
Subjective norms	2	.764
Organizatin culture	35	.959
Top management support	7	.944
Government support	7	.959

Table 3.3 shows that all the values of the reliability coefficient ranking between (.70) and (.959) which all values exceed the recommended value of 0.7 except for the self-efficacy 0.695, which it considered acceptable (Yalcinkaya et al, 2007). Based on this initial run, it was found that each instrument has a good reliability.

3.14 Data Collection Procedures

Data collection was carried out in 2009. Managers and employees were informed about the research and they were made clear that the information collected was solely for academic purposes and data would be aggregated. In other words, their identity would be made anonymous and confidential.

The questionnaire was written in two languages: English and Arabic language, as some respondents could not understand the English language. The original questionnaire in English was translated into the Arabic language by an official translation office of the United Group to Acquire U.S. Facilities Management Company UNESCO.

Before the questionnaires were distributed, permission was obtained from the CEO in every government utility after which a meeting was conducted with the information technology managers to request permission to carry out the survey and to distribute the questionnaires to the employees in the departments.

3.15 Data Analysis Method

In the current study, SPSS 16 was used for the primary analysis as well as the Structural Equation Modeling (SEM) with AMOS18. In other words, the main statistical technique employed in this study was multivariate analysis to test the research hypotheses. The use of SEM was due to the fact that it has been increasingly used in behavioral and social science research such as organizational behavior, management, business, and applied psychology (Byrne, 2010). Further, SEM can test a variety of theoretical models and provides a practical tool for researchers exploring relationships in those areas (Byrne, 2010; Schumacker & Lomax, 2004). Technically, SEM combines confirmatory factor analysis used in apparent factor structures and path analysis generally used to explore causal relationships among sets of variables.

The following are the many benefits of using SEM (Byrne, 2010):

- It takes confirmatory approach rather than exploratory approach in the data analysis.
- SEM procedures can incorporate both observed and unobserved variables, especially if the data analyses using the former methods are based on observed measurement only.
- If the traditional multivariate procedures are incapable of either assessing or correcting for measurement error, these alternative methods such as those rooted in the general linear model or regression assume that errors in the explanatory, independent variable fade. In the traditional methods, when there is error in the explanatory variable, it is just ignored and this leads to inaccuracy. But, SEM provides explicit estimates of these error variance parameters.
- SEM methodology is the only one that can apply alternative methods for modeling multivariate relation, or interval indirect effects or estimating point.

In fact, SEM expands path analysis by constructing paths between latent (theoretical) variables that cannot be directly measured, and variables that are observed (manifest). SEM involves five steps (Byrne, 2010):

3.15.1 Model specification

In this part, the theoretical model is developed. The variables which are used in the theory are identified and the relationships between these variables are set. This part is very important, because adding or omitting a variable may cause a misspecification, and then lead to the model's unfitness to the data.

3.15.2 Model identification

In this part, the constrained parameters are adjusted to suit the data. All parameters need to be identified in order to identify the entire model. There are three kinds of identification of the model:

- A just identified model is a one to one correspondence between the data and the structural parameters, which means the number of variances equals the number of covariance of the parameters to be estimated.
- An over-identified model is where the number of estimate parameters is less than the number of data points (the variances and covariance of the observed variables). Therefore, the result of the degree of freedom is positive and it allows the rejection of the model.
- Under-identified model is where the number of parameter to be estimated is more than the number of the variances and co-variances, that means, the data points are not enough to get results for these parameters.

There are different rules to solve the identification problems for the measurement model and structural model. Therefore, the path diagram of causal association is depicted and constructed.

3.15.3 Model estimation

After the parameters of the model are estimated and the sample covariance matrix type was chosen, many types of estimation methods can be used including generalized list square (GLS), ordinary list square (OLS), and maximum likelihood (MDIL) depending on the nature of the data and the sample size. Specified SEM software, AMOS, can be used for estimation.

3.15.4 Model testing

This part is about evaluating how the data fits the proposed model. The goodness-of-fit explains whether the model fits the data or rejects it. The fitness refers to whether the model can reproduce the data. If the value of the fitting function is close to zero, then it can be considered as a good model fit.

3.15.5 Model modification

If the model’s estimation of the covariance/variance matrix does not reproduce one of the samples of data, then the model can be modified and adjusted. If necessary, the path diagram might be reconstructed and parameters can be changed or fixed.

3.16 Data Analysis Tool

AMOS program (AMOS 18) was used to analyze the data. It is frequently used in research to analyze linear structural relationships and factor analysis of models in SEM. AMOS is a useful tool for this study because it is robust for the sample size of this study. AMOS has several advantages over other techniques. AMOS analyzes all of the covariance in the data and when estimating the significance level and coefficient of the paths, it enables researchers to examine all of the correlations, shared variances, and paths in the model. Byrne (2010) argued that AMOS gives more accurate and original results than other methods. It aims to measure the structure of latent variables measured by indicators. A causal structure between latent variables and underlying causes of observed variables is the first assumption for AMOS. Then, two sets of equation models are created in AMOS: a validating measurement model and a fitting structural model.

3.17 Measurement Model

The measurement model requires selecting some of the common factors (latent) and of measured variables which are related to those common factors (observed). Observed variables are used as measurements for the hypothesized latent variables. The relationship between latent variables and observed are indicated by the factor loadings. Confirmatory factor analysis was used in this model. In addition, the reliability and validity of observed variables are described by using latent variables (Byrne, 2010).

3.18 Structural Model

In the structural model, the causal relationships and their effects between latent variables are described. This model identifies the directional relation among variables. Path analysis was used in this stage. The independent (exogenous) variables and endogenous (dependent variables, mediated, and their causal relationships) variables are depicted (Byrne, 2010).

3.19 Summary

In this research, 14 hypotheses were developed to test the acceptance of the Yemeni employees and managers in the public sector of the Republic of Yemen. All the items were used for the measurement were adopted from the main theories or from the previous studies. The sample was drawn from employees and managers in various utility departments in Sana'a, who were selected using sample random sampling. Data were collected by using survey questionnaire. The survey questionnaire contained both languages Arabic language and English language, both accompanied by the appropriate consent form for the respondents. The main reason for choosing the survey questionaire method was that it provides high predictive value for assessing the efficiency of the individuals in the socities, especially when the target subject under study is related to individuals perceptions, beliefs and opinions. In order to analyze the data, SPSS software and AMOS 18 program were used.

CHAPTER FOUR

FINDINGS

4.0 Introduction

This chapter presents the findings of the study specifically on the hypotheses set earlier. The chapter is organized as follows: (1) it explains the response and response rate of the questionnaires distributed; (2) it presents the descriptive statistics of demographic information of the respondents; (3) it describes the psychometric analysis to establish validity and reliability of the instruments used; and (4) it analyzes the measurement model, structural model and the causal model by using structural equation model techniques.

4.1 Response Rate

The response rate and descriptive statistics were run as the first stage of analysis. As mentioned earlier, all in all 760 questionnaires were distributed. Of these, 585 were returned, yielding a response rate of 77%, which is considered very good (Cable & Derue, 2002) in comparison to other studies found in the relevant literature. Also, 160 cases with missing value and 68 cases outlires were deleted from 585 questionnaires were returned. Therefore, the data were ready for the analysis are 357 cases.

4.2 Demographic Background of the Respondents

Table 4.1 shows the demographic information of the participants of the study. The table is generated by running the frequency count of the responses.

Table 4.1
Demographic Background of the Participants (n = 357)

Item	No.	Percentage (%)
Gender		
- Male	269	75.35
- Female	88	24.65
Work experience		
- Less than 2 years	44	12.32
- 3 – 6 years	122	34.17
- 7 -10 years	69	19.34
- 11 – 12 years	39	10.92
- More than 12 years	83	23.25
Educational level		
- High school	61	17.09
- Community college	48	13.44
- University degree	224	62.75
- Master's degree	23	6.44
- Doctoral degree	1	.28
Organization size		
- Large	208	58.26
- Medium	144	40.34
- Small	5	1.40

As shown in Table 4.1, the majority of the participants were made up of 75.35% male. Two third of the participants had been working with their organization less than 10 years, of which 12.32% had been working less than two years, 34.17% between three and six years, and 19.34% between seven and 10 years. With regards to educational level, the majority of the participants were highly educated where 62.75% had a university degree. When asked how big their organization in which they worked, slightly half of the participants (58.26%) indicated that they were working with large organizations, while 40.34% with middle-sized ones, and only a small number with small organizations. The defining for the size of the organization depends on the number of the employees in the organization. Organization has (1-500) employees considers as small organization, and organization has between (501-2500) employees considers as middle organization and organization has more than 2500 employees considers as large organization.

4.3 Descriptive Statistics

Table 4.2 shows the minimum, maximum and mean values of the variables involved in the present study. To recall, all the variables were measured on a five-point Likert scale, ranging from '1' "Strongly disagree" to '5' "Strongly disagree."

Table 4.2
Minimum, Maximum, and Mean Values of Variables Involved (n = 357)

Variables	**Minimum**	**Maximum**	**Mean**
bi1	1	3	1.88
bi2	1	3	1.98
bi3	1	3	1.83
bi4	1	3	2.10
useful6	1	2	1.56
useful7	1	3	1.68
useful8	1	3	1.59
ease6	1	4	2.12
ease7	1	3	1.95
ease8	1	4	2.10
effic1	1	4	2.11
effic2	1	4	2.27
effic3	1	4	2.05
iqua5	1	3	2.04
iqua6	1	3	2.02
SN1	1	4	2.48
SN2	1	4	2.20
cult5	1	5	2.68
cult13	1	5	3.12
cult16	1	5	2.74
cult22	1	5	3.20
TOP3	1	4	2.46
TOP5	1	4	2.56
GOV1	1	5	2.58
GOV4	1	5	2.53
GOV5	1	5	2.55

Note. bi = behavioral intention; useful = usefulness; ease = ease of use; iqua = information quality; SN = social norms; cult = culture; TOP = top management support; GOV = government support.

4.4 Factor Analysis

Table 4.3

The Approx. Chi-Square information of the factor analysis of the study.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0.83307**
Bartlett's Test of Sphericity	Approx. Chi-Square	5092.81
	df	325
	Sig.	**0**

The table 4.3 is used as to test assumptions; essentially, the Kaiser-Meyer-Olking (KMO) statistic should be greater than 0.600 and the Bartlett's test should be significant ($p < .05$). this table shows that Kaiser-Meyer-Olking (KMO) is 0.83 and the Bartlett's test is significant . KMO is used for assessing sampling adequacy and evaluates the correlations and partial correlations to determine if the data are likely to coalesce on components (i.e. some items highly correlated, some not). The Bartlett's test evaluates whether or not our correlation matrix is an identity matrix (1 on the diagonal & 0 on the off-diagonal). Here, it indicates that our correlation matrix (of items) is an identity matrix. The off-diagonal values of our correlation matrix are zeros, therefore the matrix is an identity matrix Tabachnick and Fidell (1996) .

Table 4.4

The Communalities information of the factor analysis of the study.

Communalities		
	Initial	Extraction
bi1	1	0.62063
bi2	1	0.71702
bi3	1	0.68889
bi4	1	0.64913
useful6	1	0.82614
useful7	1	0.8386
useful8	1	0.83474
ease6	1	0.70489
ease7	1	0.79967
ease8	1	0.78217
effic1	1	0.75389
effic2	1	0.79482
effic3	1	0.67103
iqua5	1	0.86495
iqua6	1	0.86483
SN1	1	0.85548
SN2	1	0.85622
cult5	1	0.70989
cult13	1	0.79418
cult16	1	0.70054
cult22	1	0.70691
TOP3	1	0.8021
TOP5	1	0.81976
GOV1	1	0.85236
GOV4	1	0.87614
GOV5	1	0.85758

Extraction Method: Principal Component Analysis.

Acommunality (h^2) is the sum of the squared component loadings and represents the amount of variance in that variable accounted for by all the components. Table 4.4 shows that the Extraction components account ranged between 62% and 87.6% of the variance in variables. All the components exceed the recommended value 50% for each component Tabachnick and Fidell (1996).

Table 4.5

The Total Variance Explained of the factor analysis of the study.

Total Variance Explained									
Comp-onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumula-tive %	Total	% of Variance	Cumula-tive %	Total	% of Variance	Cumulative %
1	6.45177	24.8145	24.8145	6.45177	24.8145	24.8145	3.11552	11.9828	11.9828
2	4.0514	15.5823	40.3968	4.0514	15.5823	40.3968	2.94184	11.3148	23.2975
3	2.01494	7.74978	48.1466	2.01494	7.74978	48.1466	2.56931	9.88197	33.1795
4	1.78721	6.8739	55.0205	1.78721	6.8739	55.0205	2.54726	9.79716	42.9767
5	1.53307	5.89641	60.9169	1.53307	5.89641	60.9169	2.34503	9.01935	51.996
6	1.41676	5.4491	66.366	1.41676	5.4491	66.366	1.98684	7.64171	59.6377
7	1.23057	4.73294	71.099	1.23057	4.73294	71.099	1.751	6.73461	66.3723
8	1.04292	4.01122	75.1102	1.04292	4.01122	75.1102	1.67962	6.46007	72.8324
9	0.71389	2.74573	77.8559	0.71389	2.74573	77.8559	1.30611	5.0235	77.8559
10	0.63151	2.42888	80.2848						
11	0.58178	2.23761	82.5224						
12	0.51963	1.99858	84.521						
13	0.45994	1.76901	86.29						
14	0.42521	1.63544	87.9254						

15	0.39854	1.53284	89.4583	
16	0.36505	1.40402	90.8623	
17	0.35611	1.36965	92.2319	
18	0.28465	1.09481	93.3267	
19	0.28036	1.07831	94.4051	
20	0.27539	1.05919	95.4642	
21	0.2354	0.90539	96.3696	
22	0.22224	0.85476	97.2244	
23	0.21472	0.82583	98.0502	
24	0.20757	0.79834	98.8486	
25	0.16058	0.61762	99.4662	
26	0.13879	0.53381	100	

Extraction Method: Principal Component Analysis.

The table 4.5 is intuitively named and reports the variance explained by each component as well as the cumulative variance explained by all components. When we speak of variance explained with regard to this table, we are referring to the amount of variance in the total collection of variables/items which is explained by the components. For instance, component 9 explains 5.0235% of the variance in the items; specifically, in the items' variance-covariance matrix. Also, 77.8559% of the variance in our items was explained by the 9 extracted components, and that exceed the recommended value > 50% Tabachnick and Fidell (1996).

In another wards, the initial number of factors is the same as the number of variables used in the factor analysis. However, not all 26 factors will be retained. In this example, only the first nine factors will be retained. The number of rows in the

Extraction Sums of Squared Loadings panel of the table correspond to the number of factors retained. There are nine rows, one for each retained factor. The values in this panel of the table are calculated in the same way as the values in the left panel,however, the values here are based on the common variance. The values in this panel of the table will always be lower than the values in the left panel of the table, because they are based on the common variance, which is always smaller than the total variance. The values in the Rotation Sums of Squared Loadings panel of the table represent the distribution of the variance after the varimax rotation. Varimax rotation tries to maximize the variance of each of the factors, so the total amount of variance accounted for is redistributed over the nine extracted factors.

Table 4.6
The Component Matrix of the items in factor analysis of the study.

	1	2	3	4	5	6	7	8	9
bi1	0.5761	0.14828	0.15345	0.23184	-0.1438	-0.3843	-0.1234	0.03404	-0.0685
bi2	0.49696	0.15199	0.17691	0.34156	-0.2137	-0.3883	-0.2076	-0.133	0.20433
bi3	0.5656	0.23716	0.18479	0.26254	-0.2117	-0.2392	-0.2136	-0.0633	-0.2408
bi4	0.54296	0.21599	0.23221	0.26899	-0.124	-0.3551	-0.1654	-0.0594	0.09513
useful6	0.47332	0.47993	-0.3401	-0.2171	0.15153	0.09829	-0.3141	0.21075	0.18233
useful7	0.48873	0.55628	-0.3029	-0.2341	0.17466	0.02434	-0.2956	0.10005	0.12355
useful8	0.49264	0.52892	-0.3361	-0.2375	0.13489	0.10011	-0.2996	0.12248	0.09991
ease6	0.45939	0.45585	-0.0204	-0.2467	-0.1765	-0.0976	0.41271	0.11713	0.00074
ease7	0.49581	0.48997	0.00825	-0.2919	-0.2024	-0.0923	0.41392	0.08646	-0.0154
ease8	0.4298	0.48449	0.02848	-0.2337	-0.2551	-0.1226	0.46966	0.05385	-0.0608
effic1	0.23018	0.28395	0.58382	0.1662	0.01917	0.45377	0.05472	0.15173	0.13971
effic2	0.31308	0.28391	0.6206	0.0709	0.00867	0.40323	0.03998	0.0096	0.24833

effic3	0.22326	0.31145	0.46887	-0.0047	-0.0583	0.42473	-0.1934	-0.1517	-0.2452
iqua5	0.61166	0.22274	-0.2277	0.06854	0.16074	0.20824	0.10851	-0.5374	-0.122
iqua6	0.58083	0.17161	-0.2703	0.08811	0.27259	0.14259	0.10834	-0.5528	-0.0727
SN2	0.4581	-0.0353	-0.1935	0.56307	0.2773	0.07503	0.1948	0.37082	-0.1806
cult5	0.54264	-0.3611	0.20374	-0.2011	0.38536	-0.2249	0.0302	0.02159	-0.0515
cult13	0.53281	-0.4988	0.16501	-0.2459	0.34766	-0.1589	0.16421	-0.0134	0.02258
cult16	0.55708	-0.4416	0.22612	-0.1176	0.34539	-0.1016	-0.0194	0.0067	0.01321
cult22	0.43908	-0.4672	0.28598	-0.1954	0.32466	-0.1079	0.07018	0.00158	0.23224
TOP3	0.55464	-0.4084	0.02899	-0.3331	-0.2251	0.15763	-0.2145	0.15132	-0.2672
TOP5	0.57561	-0.4254	0.07505	-0.2856	-0.1942	0.1162	-0.2088	0.1452	-0.3231
GOV1	0.54134	-0.5556	-0.2326	0.1415	-0.3116	0.15377	0.00774	-0.0626	0.22749
GOV4	0.55242	-0.5597	-0.2475	0.0549	-0.3491	0.17266	0.06791	-0.0206	0.19144
GOV5	0.54204	-0.5471	-0.2438	0.11378	-0.3534	0.22659	0.06204	0.00024	0.10925

Extraction Method: Principal Component Analysis.

a. 9 components extracted.

The Table 4.6 displays each variable's loading on each component. We notice from the output, we have three items (effic1, effic2, effic3) which do not load on the first component (always the strongest component without rotation) but create their own retained component (also with eigenvalue greater than 1). Ususally a component should have, as a minimum, 3 items/variables; Therefore, our components are related Hair et al., (1981).

Table 4.7

The Rotated Component Matrix of the items in factor analysis of the study.

Component									
	1	2	3	4	5	6	7	8	9
bi1	0.15158	0.06081	**0.71331**	0.09983	0.19262	0.01972	0.15225	0.03302	0.11586
bi2	0.06839	0.15812	**0.80572**	0.09025	0.05141	0.08047	0.00314	0.05753	-0.1326
bi3	-1E-04	0.01851	**0.7206**	0.08922	0.1479	0.12306	0.13223	0.16195	0.28389
bi4	0.13325	0.04777	**0.75363**	0.12557	0.13341	0.13522	0.06413	0.06123	-0.0376
useful6	0.00303	0.02659	0.10012	**0.87637**	0.16872	0.05035	0.09645	0.07858	0.02995
useful7	0.01206	-0.0712	0.1667	**0.85021**	0.21588	0.03401	0.04558	0.17829	0.03345
useful8	-0.0247	-0.0119	0.11866	**0.8552**	0.20927	0.04883	0.0639	0.17704	0.08321
ease6	0.03092	0.01471	0.13531	0.22116	**0.7886**	0.08288	0.04507	0.07517	0.00667
ease7	0.03568	0.00891	0.15332	0.23357	**0.83406**	0.11137	0.0002	0.10347	0.0385
ease8	-0.0258	-0.0111	0.17022	0.11997	**0.84698**	0.08988	0.00437	0.10787	0.03023
effic1	0.02277	-0.0371	0.07778	0.0245	0.11016	**0.84206**	0.14407	-0.0538	-0.0222
effic2	0.11413	0.00683	0.13926	0.06159	0.14245	**0.85447**	-0.0145	0.02665	-0.085
effic3	-0.0909	-0.1468	0.127	0.0546	0.01508	**0.65623**	-0.0802	0.238	0.358
iqua5	0.09159	0.15698	0.14569	0.22738	0.19231	0.0962	0.12336	**0.83425**	0.03943
iqua6	0.16546	0.12623	0.12937	0.2322	0.12635	0.0182	0.14783	**0.84292**	-0.0469
SN1	0.04543	0.13811	0.12471	0.12407	-0.0055	0.06297	**0.87966**	0.14609	-0.0652
SN2	0.1268	0.13345	0.15087	0.06377	0.04861	0.02112	**0.88617**	0.08191	0.02626
cult5	**0.80091**	0.04712	0.14623	0.04073	0.04586	-0.0324	0.08657	0.08438	0.15935
cult13	**0.8491**	0.19305	0.02101	-0.047	0.08487	-0.0494	0.05787	0.09851	0.10292
cult16	**0.77683**	0.17285	0.13746	0.01961	-0.0589	0.06492	0.10401	0.08815	0.14714

cult22	**0.80477**	0.20321	0.04806	-0.0226	-0.0273	0.10477	-0.0303	-0.015	-0.0477
TOP3	0.34411	0.45277	0.04869	0.13626	0.06026	0.03641	-0.0575	-0.0378	**0.66937**
TOP5	0.38105	0.41309	0.09999	0.08503	0.04771	0.03615	-0.0153	-0.0233	**0.6945**
GOV1	0.20571	**0.87301**	0.13584	-0.0156	-0.0524	-0.0507	0.09711	0.10454	0.05936
GOV4	0.21344	**0.89069**	0.07359	-0.0159	0.03733	-0.0647	0.08221	0.07937	0.11382
GOV5	0.16037	**0.87291**	0.06553	-0.0424	0.01638	-0.0347	0.15105	0.09555	0.17429

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

The rotated component matrix Table 4.7 shows that which items/variables load on which components after rotation. Every item loads in its construct and its loading must exceed the recommended value of (.50). Also, the loading of every items on the another constructs did not exceed the recommended value .50 Hair et al., (2010).

4.5 Validity

Validity test is commonly conducted to examine whether the items measure what they are supposed to measure. There are many types of validity to assess the validity of the constructs, such as, content, construct, criterion and external validity. This study achieved the external validity due to the high response rate (77%) with a sample size of 357. Also, content validity was achieved as all the items used to measure the constructs were adopted from the previous literature and were tested in those studies.

To assess the construct validity, the relations between the constructs involved were examined by the convergent validity (related) and discriminant validity (unrelated) (Chismar, Pattan, 2003). From the standardized total effects, convergent validity was assessed by examining to what extent every item in the scale load in its construct. Discriminant validity is said to be achieved when every item (scale) has zero effect on the other construct. The result of these validity tests is shown in Table 4.8.

Table 4.8
Convergent and Discriminant Validity of All Indicators

Standardized Total Effects									
	ease	Usefulness	intention	Government	Management.	Culture	Norms	quality	efficacy
ease6	0.734								
ease7	0.873								
ease8	0.801								
useful6		0.822							
useful7		0.882							
useful8		0.885							
bi1			0.692						
bi2			0.69						
bi3			0.729						
bi4			0.726						
GOV1				0.871					
GOV4				0.925					
GOV5				0.904					
TOP3					0.869				
TOP5					0.875				
cult5						0.763			

cult13						0.86			
cult16						0.784			
cult22						0.719			
SN1							0.862		
SN2							0.837		
iqua5								0.89	
iqua6								0.856	
effic1									0.73
effic2									0.843
effic3									0.548

Table 4.8 shows that the standardized total effects, convergent validity was assessed by examining to what extent every item in the scale load in its construct. For example, the scales ease6, ease7 and ease8 loading in their construct Ease of use. They have zero load in the another constructs. The same matters for all the constructs, all have their load in their own constrcts and have zero load on the another constructs.

4.6 Reliability

In addition to validity, reliability was also assessed by using confirmatory factor analysis. The scale used in the present study is considered reliable when the composite reliability > .70 (Hair et al., 1981, 2010). Table 4.9 shows the result.

Table 4.9

Cronbach's Alpha of the Variables (n = 357)

Construct	Cronbach's alpha	Number of Items
Intention behavior	.801	4
usefulness	.895	3
Ease of use	.843	3
Self efficacy	.744	3
Information quality	.864	2
Subjective norms	.820	2
Organization Culture	.859	4
Top management support	.863	2
Government support	.927	3

A commonly accepted rule for describing internal consistency using Cronbach's alpha is as follows: when Cronbach's alpha is ($\alpha \geq .9$), the Internal consistency considered as Excellent; When Cronbach's alpha is ($.9 > \alpha \geq .8$), internal consistency considered as good; When Cronbach's alpha ($.8 > \alpha \geq .7$), the Internal consistency considered as Acceptable; When Cronbach's alpha ($.7 > \alpha \geq .6$), the Internal consistency considered as Questionable; when Cronbach's alpha ($.6 > \alpha \geq .5$), the Internal consistency considered as Poor; Finally, when Cronbach's alpha ($.5 > \alpha$), the Internal consistency considered as Unacceptable Cronbach, Shavelson, (2004).

However, table 4.9 shows all the values ranking between good and excellent, except for Self efficacy, it considered Acceptable.

The Cronbach's alpha reliability depends on the intercorrelations of the indicators: the higher the alpha, the higher the reliability. Alpha is considered to be an index of unidimensionality. However, a higher alpha does not guarantee unidimensionality and it is an overestimate of reliability (Raykov, 2001). Therfore, the study calculated the composite reliability and average variance extracted (AVE) based on the formula bellow:

(sum of standardized loading) 2 / [(sum of standardized loading) 2 + sum of indicator measurement error (the sum of the variance due to random measurement error for each loading-- 1 minus the square of each loading].

Average variance extracted (AVE), according to Fornell and Larcker (1981) can be measured by the formula:

sum of squared standardized loading / sum of squared standardized loading + sum of indicator measurement error--sum of the variance due to random measurement error in each loading=1 minus the square of each loading).

Table 4.10

Composite Reliability and Average Variance Extracted for All Indicators in Each Factor.

Construct	Items	Factor loadings	Variance	**Composite reliability**	**Average variance extracted**	Number of item deleted
intention	Bi1	.692	.237	.80	.50	-
	Bi2	.690	.248			
	Bi3	.729	.208			
	Bi4	.726	.190			
Usefulness	Useful6	.822	.080	.90	.75	2
	Useful7	.882	.071			
	Useful8	.885	.060			
Ease of use	Ease6	.734	.215	.85	.65	1
	Ease7	.873	.104			
	Ease8	.801	.173			
Self efficacy	Effic1	.730	.223	.76	.51	2
	Effic2	.843	.169			
	Effic3	.548	.288			
Quality	Iqua5	.890	.099	.87	.74	2
	Iqua7	.856	.109			
Norms	Sn1	.862	.206	.84	.72	-
	Sn2	.837	.138			

Culture	Cult5	.763	.311	.86	.61	6
	Cult13	.860	.308			
	Cult16	.784	.268			
	Cult22	.719	.342			
Top management support	Top3	.869	.160	.86	.76	5
	Top5	.875	.174			
Government support	Gov1	.871	.231	.93	.81	4
	Gov4	.925	.131			
	Gov5	.904	.156			

Table 4.10 shows that the composite reliability is between .76 and .93 and this exceeds the recommended value .70, as suggested by Hair et al. (1998, 2010). Also, the average variance extracted is between .50 and .81 and this exceeds the recommended value .50, as suggested by Hair et al. (1998, 2010).

However, the high error correlation between the indicators, especially the indicators in the same diminution such as (Cult8, Cult15, Cult17, Cult23, Cult25, Cult28) for the culture, (Top1, Top2, Top4, Top6, Top7) for the top management and (Gov2, Gov3, Gov6, Gov7) for the government support, were managed by ignoring the higher error correlation. In addition, some indicators were ignored from the analysis such as (Effic4, Effic5) for the self-efficacy and (Iqua4, Iqua6) for the information technology in order to assess the criteria of the validity and reliability, the recommended value .70, as suggested by Hair et al. (1998, 2010).

4.7 The Measurement Model

Confirmatory factor analysis was conducted to establish the structural dimensionality, validity and reliability of the constructs of usefulness, ease of use, self-efficacy, information quality, subjective norms, culture, top management support, and government support. To assess the dimensionality of the model, the good of fitness measurements were used as they are recommended in most of the studies that used SEM (AMOS). The model is considered having good of fitness if its values meet the recommended criteria, which are X^2/df (minimum discrepancy CMIN / degree of freedom DF) should be less than 2.0, the root mean square residual RMR < .050 (Hu & Bentler, 1995; Tanaka, 1993), Goodness of Fit GFI, Adjusted Goodness of Fit index AGFI, Normed Fit Index NFI , The Tucker-Lewis index TLI, the relative fit index RFI should be at least equal to or > .90, and Root Mean Square Error of Approximation RMSEA should be less than .080 (Byrne, 2010; Hair et al, 2010; Tucker & Lewis, 1973).

In the first run of the confirmatory factor analysis, the result did not meet the recommended criteria as the χ^2 was large at 2053.003 relative to the degrees of freedom (df = 953), indicating the need to modify the model (Byrne, 2010).

The recommendations of Byrne (2010) were followed to modify the model. The first model had misspecification such as Useful4, Useful5 and Ease5 and that was managed by using the unstandardized and standardized residuals which are analogous to Z-score and the values > 2.58 are considered large (Hair et al, 2010). The high error correlation between the indicators, especially the indicators in the same diminution such as (Cult8, Cult15, Cult17, Cult23, Cult25, Cult28) for the culture, (Top1, Top2, Top4, Top6, Top7) for the top management and (Gov2, Gov3, Gov6, Gov7) for the government support, were managed by ignoring the higher error correlation. In addition, some indicators were ignored from the analysis such as (Effic4, Effic5) for the self-efficacy and (Iqua4, Iqua6) for the information technology in order to assess the criteria of the validity and reliability.

After the modification was made, table 4.11 shows that the model seemed to show a goodness of fit with χ^2/DF (CMIN/DF) = 1.294, GFI = .932, AGFI =.909, NFI = .935, CFI = .984, RMR = .019, RMSEA = .029. for more information, refer to (Appendix A2 – Measurment Model).

Table 4.11
Confirmatory Factor Analysis for the Measurement Model and the Modified Model.

Fit index	**Recommended criteria**	**Result of first model before modification**	**Result of second model after modification**
Chi Square (χ^2/ **degrees of freedom)**	< 2.00	2.154	1.294
Goodness of Fit **(GFI)**	> .90	.800	.932
Adjusted Goodness of Fit (**AGFI)**	> .90	.773	.909
Normed Fit Index **(NFI)**	> .90	.858	.935
Comparative fit index **(CFI)**	> .90	.918	.984
Root Mean Square Residual **(RMR)**	< .050	.030	.019
Root Mean Square Error of Approximation **(RMSEA)**	< .080	.057	.029
The expected cross-validation index (**ECVI)**	The smaller to its stander	6.486 from 6.073	1.450 from 1.972
p < .001		p < .000	p < .001

Also, table 4.11 shows the result of the Confirmatory Factor Analysis for the Measurement Model and the Modification for the Measurement Model. the first column in the left shows the indice that measure the good of fitness for the model which are the Chi Square (χ^2/ degrees of freedom), Goodness of Fit (GFI), Adjusted Goodness of Fit (AGFI), Normed Fit Index (NFI), Comparative fit index (CFI), Root Mean Square Residual (RMR), Root Mean Square Error of Approximation (RMSEA) and the P value for the probability. The second column in the meddle shows the recommended value for the well fit model according to (Byrne, 2010; Hair et al, 2010; Tucker & Lewis, 1973). The third column in the right shows the values obtained from this model. Obviously, by comparing the obtained values of the model and the recommended values, the model assess the wel-fitting model. The first result of the analysis of the model seems that it did not achieve the goodness of fit. After several rounds of Modifications for the model, the model achieved the good of fitness, and the following tables explain that in details.

Table 4.12
Modification Indices, Covariances:

			M.I.	Par Change
e48	<-->	Norms	7.201	0.042
e8	<-->	e47	7.22	-0.021
e7	<-->	e47	6.612	0.022
e7	<-->	e10	5.021	0.019
e3	<-->	e47	4.087	0.026
e1	<-->	e47	7.737	-0.037
e1	<-->	e2	8.338	0.044
e44	<-->	e48	12.58	0.047
e44	<-->	e47	4.196	-0.025
e44	<-->	e8	10.232	0.024
e44	<-->	e7	5.842	-0.02
e44	<-->	e13	5.957	-0.034
e40	<-->	ease	5.965	-0.031
e40	<-->	intention	4.134	0.025
e40	<-->	e48	4.917	-0.034
e40	<-->	e47	5.757	0.033
e40	<-->	e8	7.048	-0.023
e40	<-->	e13	4.225	0.033
e29	<-->	e3	5.814	-0.041
e29	<-->	e44	4.756	-0.034
e27	<-->	ease	6.567	-0.035
e25	<-->	ease	6.987	0.043
e25	<-->	intention	5.641	-0.037
e23	<-->	e1	6.076	0.042
e21	<-->	e23	4.376	0.031
e17	<-->	e12	4.469	0.023
e15	<-->	e3	7.828	0.042
e15	<-->	e17	5.508	0.03

Table 4.13

Modification Indices, Regression Weights:

			M.I.	Par Change
useful7	<---	bi4	4.58	0.058
useful7	<---	GOV5	4.782	-0.041
bi3	<---	cult22	5.023	-0.072
bi3	<---	effic3	7.019	0.111
bi1	<---	cult5	7.11	0.087
effic2	<---	cult22	4.995	0.08
GOV5	<---	effic1	6.061	0.089
GOV5	<---	cult22	4.124	-0.06
GOV1	<---	bi4	5.592	0.107
cult22	<---	useful7	4.423	-0.123
cult22	<---	bi3	4.579	-0.107
cult13	<---	intention	5.519	-0.2
cult13	<---	efficacy	5.704	-0.149
cult13	<---	effic1	5.384	-0.121
cult13	<---	bi2	6.25	-0.131
cult13	<---	effic3	5.461	-0.131
cult5	<---	usefulness	5.249	0.19
cult5	<---	intention	4.032	0.153
cult5	<---	useful7	6.524	0.145
cult5	<---	bi1	8.348	0.138
SN2	<---	Culture	4.143	0.081
SN2	<---	cult5	7.266	0.077
SN1	<---	cult22	4.718	-0.083
SN1	<---	cult5	6.384	-0.094
iqua6	<---	effic1	4.71	-0.067
iqua5	<---	effic3	6.883	0.093
effic3	<---	bi3	4.957	0.099

M.I Modification Indice , Par Change Value of the every single change

The table 4.12 and table 4.13 show information related to misspecification, it reflects the extent to which the hypothesized model is appropriately described. While this model appears to fit the data, it may still be possible to improve the fit further. These modification indices make suggestions about loosening constraints on certain model parameters, in order to improve the overall model fit. As long as any decisions made on the basis of modification indices are theoretically meaningful and do not result in an unidentified model, these suggestions can be helpful in improving model specification. By reviewing the parameters in the covariance in table 4.13, only the parameters with high covariance require for modification. However, the covariance between e44 and e8 with modification indice M.I value 10.232 could make estimated per change EPC 0.024, and the covariance between e44 and e48 with M.I value 12.58 could make estimated per change EPC 0.047, they do not make any substantive sence (meaningful) for their modification Byrne (2010). Byrne also mentioned that there is not any important modification could be made to the model since the model already achieved the goodness of fit.

Table 4.14
Model Fit Summary, CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	88	340.338	263	0.001	1.294
Saturated model	351	0	0		
Independence model	26	5232.44	325	0	16.1

NPAR Number of Parameters , CMIN Minimum Discrepancy , DF Degree of Freedom , P Probability Value , CMIN/DF The Ratio of Test Statics.

The table 4.14 shows three models in the three rows are hypothesized model (default model), Saturated model and the independence model (null model). The Saturated model considered as the high extreme in which the number of estimated parameters equals the number of data points with zero degree of freedom DF, the independence model (null model) considered as the lower extreme in which all the correlations among variables are zero, and the hypothesized model (default model) is somewhere between the two extremes to achieve the good identification for the whole model. The test of the hypotheses in the table 4.15 , yielded a CMIN (X^2) value of 340.338, with 263 degree of freedom and a probability of .0001, that means the fit of the data to the hypothesized model is adequate Byrne (2010); Hair et al, (2010). Finaly, CMIN/DF which related to the confidence intervals, it yielded with value 1.294, in which it must be below 3,000, as recommended in most of the previous studies and by Byrne (2010); Hair et al, (2010).

Table 4.15
Model Fit Summary, RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.019	0.932	0.909	0.698
Saturated model	0	1		
Independence model	0.166	0.346	0.294	0.321

RMR Root Mean Square Residual , GFI Goodness of Fit Index , AGFI Adjusted Goodness of Fit Index, PGFI Parsimony Goodness of Fit Index.

Also, the table 4.15 shows that RMR represents the average residual value drived from the fitting of the variance covariance matrix of the hypothesized model to the variance covariance matrix of the sample data. However, due to that the residual is related to the size of observed variance and covariance, it is difficult to interpret. Therefore, it is interpreting related to the correlation matrix Joreskog, Sorbom, (1989). RMR recommended value is .05 or less, and in this model RMR value is 0.019 which considered as well fitting model Byrne (2010).

Also, GFI goodness of fit index which is a measure of amount of variance and covariance in the sample that jointly explained by the hypothesized model. AGFI is differ than GFI in that, AGFI adjusted for the number of the degree of freedom and it compare the hypothesized model to the null model. GFI and AGFI ranged between zero and 1, and the more closer to 1 the more good fit model. Also, GFI and AGFI values must be >.90 for good fit or >.95 for the very well fit Hu and Bentler (1999); Byrne (2010). In this table 4.16, GFI and AGFI values are (0.932 and 0.909, respectively), that means the hypothesized model fits the sample data very well. PGFI parsimony goodness of fit index considers (the complexity) the number of estimated parameters of the hypothesized model for the assessment of overall model fit, and it is ranged below .90, in this model PGFI value is 0.698, which refer to the significant of X^2 (CMIN) Byrne (2010).

Table 4.16
Model Fit Summary,Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	0.935	0.92	0.984	0.981	0.984
Saturated model	1		1		1
Independence model	0	0	0	0	0

NFI Normed Fit Index , RFI Relative Fit Index , IFI Incremental Index of Fit , TLI Tucker-Lewis Index , CFI Comparative Fit Index.

Beside that, the table 4.16 shows that The Normed Fit Index NFI recommended value range from zero to 1.00 with value >.90 considered as well-fitting model, in this model NFI value .935 which it exceeded the recommended value. However, NFI showed a tendency to underestimate fit in the small sample, Bentler (1992) developed NFI to take the small sample into account and proposed the Comparative Fit Index CFI which it exceeded the recommended value between zero and 1.00 with value >.90. In this model, CFI value is .984 which it considered as very well-fitting model. Also, the Relative Fit Index RFI, the coefficient value .92 showed well-fitting of the model in that it exceeded the recommended value >.90 and the values closer to value .95 considered as good fitting model Hu and Bentler (1999). Incremental Index of Fit IFI which address the issues of the parasimony and the sample size, it puts in its account the degree of freedom. Therefore, its value would be smilar to CFI, with value .984 which considered as well fit. Also, Tucker-Lewis Index TLI exceeded the recommended value of >.90 Hu and Bentler (1999).

Table 4.17
Model Fit Summary,Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	0.809	0.757	0.796
Saturated model	0	0	0
Independence model	1	0	0

PRATIO, The Initial Parasimony Ratio

Even, the table 4.17 shows the PRATIO indice which related to the parsimony issues. This indice shows ratio related to NFI and CFI with putting into account the complexity of the model. These ratio values PRATIO = .809, PNFI= .757 and PCFI= .796 consided as good of fit, the more closer to 1.00 the better Byrne (2010).

Table 4.18
Model Fit Summary,NCP

Model	NCP	LO 90	HI 90
Default model	77.338	33.823	128.976
Saturated model	0	0	0
Independence model	4907.44	4676.42	5144.88

NCP Non-Centrality Parameter

Moreover, the table 4.18 shows that the correct of the hypothesized model when it centralized between The Saturated model (the high extreme) in which the number of estimated parameters equals the number of data points with zero degree of freedom DF and the independence model (null model or the lower extreme) in which all the correlations among variables are zero. NCP , also, measures the (population badness of fit) discrepancy between the data covariance matrix Σ and the hypothesized covariance matrix [Σ0].In this study, the hypothesized model yield a noncentrality parameter of (77.338) , this value represents the X^2 value (340.338) minus its degree of freedom (263). The confidence interval indicates that we can be confident that the population value of the noncentrality parameter (y) lies between 33.823 and 128.976.

Table 4.19
Model Fit Summary,RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.029	0.019	0.037	1
Independence model	0.206	0.201	0.211	0

RMSEA Root Mean Square Error of Approximation

Also, the table 4.19 shows that RMSEA takes into account the square error of approximation to measure how well would be the model, with unknown, but optimal chosen parameter values, fit the population covariance matrix. RMSEA recommended value of < .080 , in this model RMSEA value is 0.029 with 90% confidence interval ranging between 0.019 and 0.037 with P-value for the test of closeness of fit equals 1.00 and that refers for well fitting model (Byrne, 2010). RMSEA is considered a very important index for three reasons are: (1) it is adequately sensitive to model misspecification, (2) commonly used interpretative guidelines would appear to yield appropriate conclusion regarding model quality, (3) RMSEA value can build confidence intervals (Hu and Bentler, 1999).

Table 4.20
Model Fit Summary,AIC

Model	AIC	BCC	BIC	CAIC
Default model	516.338	530.782	857.579	945.579
Saturated model	702	759.611	2063.09	2414.09
Independence model	5284.44	5288.71	5385.26	5411.26

AIC Akaike Information Criterion, CAIC Consistent version of the AIC ,

BCC Beowne-Cudeck Criterion, BIC Bayes Information Criterion.

In addition, the table 4.20 shows AIC index which it used to address the issue of parasimony in the assessment of the model fit, the statistical good of fitness and the number of estimated parameters. However, CAIC take sample size into account. AIC and CAIC indices used in the comparison of two or more models, with smaller values representing a better fit of the hypothesized model. In this model, both have the smallest values 516.338 and 945.579, respectively. Similar, BCC and BIC which put into account the complexity of the model, they have the smallest values of 530.782 and 857.579 , respectively.

Table 4.21
Model Fit Summary,ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.45	1.328	1.595	1.491
Saturated model	1.972	1.972	1.972	2.134
Independence model	14.844	14.195	15.511	14.856

ECVI Expected Cross-Validation Index, MECVI Modified Expected Cross-Validation Index.

Finaly, the table 4.21 shows Expected Cross-Validation Index ECVI, which measures the discrepancy between the fitted covariance matrix in the analyzed sample and the expected covariance matrix that would be obtained in another sample from the same size. The model with the smallest ECVI value is considered as the greatest potentiel for replication. In this model, ECVI value of 1.45 is the smallest value compared to the Saturated model value of 1.972 and the Independence model value of 14.844, that represent the best fit to the data (Byrne, 2010).

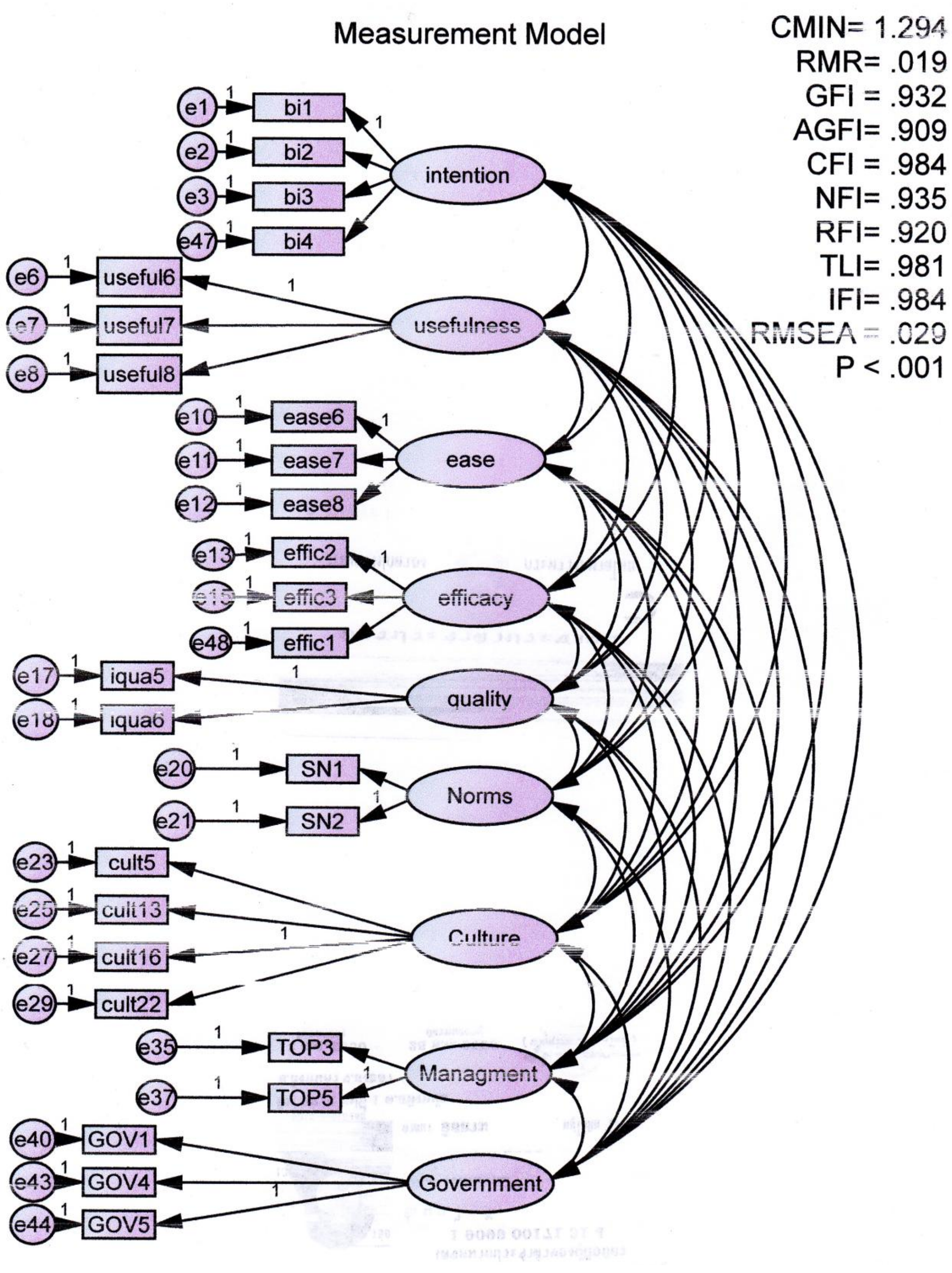

Figure 4.1Measurement model

Figure 4.1
The goodness of fit of the modified measurement model.

4.8 Structural Model

In the structural factor analysis, the structural model was used to examine the relationship between the latent variables. The analysis was also to examine the hypothesized relationship between the latent variables and behavioral intention to use the information technology.

In the structural model, the first stage is to examine the model good of fitness. As in the measurement model, we used the same criteria for the fit of the model: χ^2/df (CMIN/df) should be less than 2.0, RMR < .050 (Hu & Bentler, 1995; Tanaka, 1993), GFI, NFI, TLI, RFI should be at least equal to or > .90, RMSEA should be less than .080 (Byrne, 2010; Hair et al, 2010; Tucker & Lewis, 1973). The result is shown in Table 4.22. for more information ,refer to (Appendix B1, structural model).

Table 4.22
Confirmatory Factor Analysis for the Structural Model before the Modification of the Model.

Fit index	**Recommended criteria**	**Result of model before modification**
Chi Square (χ^2**/ degrees of freedom)**	< 2.00	1.372
Goodness of Fit **(GFI)**	> .90	.973
Adjusted Goodness of Fit (**AGFI)**	> .90	.955
Normed Fit Index **(NFI)**	> .90	.973

Comparative fit index **(CFI)**	> .90	.992
Root Mean Square Residual **(RMR)**	< .050	.022
Root Mean Square Error of Approximation **(RMSEA)**	< .080	.032
p < .050		p < .059

Table 4.22 shows the result of the Confirmatory Factor Analysis for the Structural Model. The analysis result of the model achieved the good of fitness in that the first column on the left shows the indice that measure the good of fitness for the model which are the Chi Square (χ^2/ degrees of freedom), Goodness of Fit (GFI), Adjusted Goodness of Fit (AGFI), Normed Fit Index (NFI), Comparative fit index (CFI), Root Mean Square Residual (RMR), Root Mean Square Error of Approximation (RMSEA) and the P value for the probability. The second column in the meddle shows the recommended value for the well fit model according to Byrne (2010); Hair et al (2010) and Tucker & Lewis (1973). The third column in the right shows the values obtained from this model. Obviously, by comparing the obtained values of the model and the recommended values, the model assessed the well-fitting model.

Table 4.23

Modification Indices, Covariance:

			M.I.	Par Change
Norms	<-->	ease	8.557	0.062
e8	<-->	e4	7.659	-0.021
e7	<-->	e10	4.765	0.019
e7	<-->	e4	5.724	0.02
e21	<-->	ease	11.047	0.038
e20	<-->	ease	4.163	-0.027

Table 4.24

Modification Indices, Regression Weights

			M.I.	Par Change
useful7	<---	bi4	4.405	0.058
SN2	<---	ease	11.047	0.114
SN2	<---	useful8	4.504	0.074
SN2	<---	ease8	9.74	0.082
SN2	<---	ease7	11.51	0.094
SN1	<---	ease	4.163	-0.081
SN1	<---	ease8	4.975	-0.069
SN1	<---	ease7	4.989	-0.072

Table 4.23 and table 4.24 show information related to misspecification, which reflects the extent to which the hypothesized model is appropriately described. In the structural model, the analysis pays more intention for the Regression Weights in the Modification Indices. However, by reviewing the parameters in the Regression Weights in table 4.24, only the parameters with high covariance require modification. The Regression Weights between the subjective norms indicator SN2 and ease of use factor with modification indice M.I value 11.047 could make estimated per change EPC 0.114, and the Regression Weights between subjective norms indicator SN2 and ease7 with M.I value 11.51 could make estimated per change EPC 0.094, they do not make any substantive sense (meaningful) for their modification (Byrne, 2010). Byrne also mentioned that since, the model already achieved the goodness of fit, there are not any important modification could be made to the model.

Moreover, over and above the fit of the model as whole, another indice for examining the model misspecification is the Standardized Residual Covariance, the Standardized Residual Covariance revealed that there are discrepancies between the stricted covariance matrix was implied by the hypothesized model and the sample covariance matrix, and that was an evidence for the model misspecification that appeared in the table 4.26 below.

Table 4.25
Standardized Residual Covariance.

	ease6	bi4	Useful8	bi3	ease8	ease7	Useful7	Useful6	bi2	SN2	SN1
ease6	0										
bi4	0.993	0.257									
useful8	0.304	-0.574	0								
bi3	1.255	0.241	0.929	0.221							
ease8	-0.028	0.036	-0.507	1.23	0						
ease7	-0.144	0.129	0.253	0.309	0.113	0					
useful7	1.184	0.948	-0.024	1.287	-0.55	-0.016	0				
useful6	0.529	0.101	0.062	0.555	-1.022	0.006	-0.02	0			
bi2	0.022	0.457	0.018	0.096	-0.026	0.198	-0.218	-0.028	0.171		
SN2	2.436	1.016	2.475	0.844	2.385	**2.775**	2.085	**2.638**	1.002	0	
SN1	1.805	0.274	1.608	0.624	0.818	1.143	1.383	2.494	0.93	0	0

However, the structural model CFI seems to have a goodness of fit because the model meets the recommended criterian. There are two indicators that caused misspecification for the model as show in Table 4.25. They appeared in the standardized residual covariance with values 2.775 and 2.638, respectively, which exceeded the recommended value of < 2.58 (Byrne, 2010).

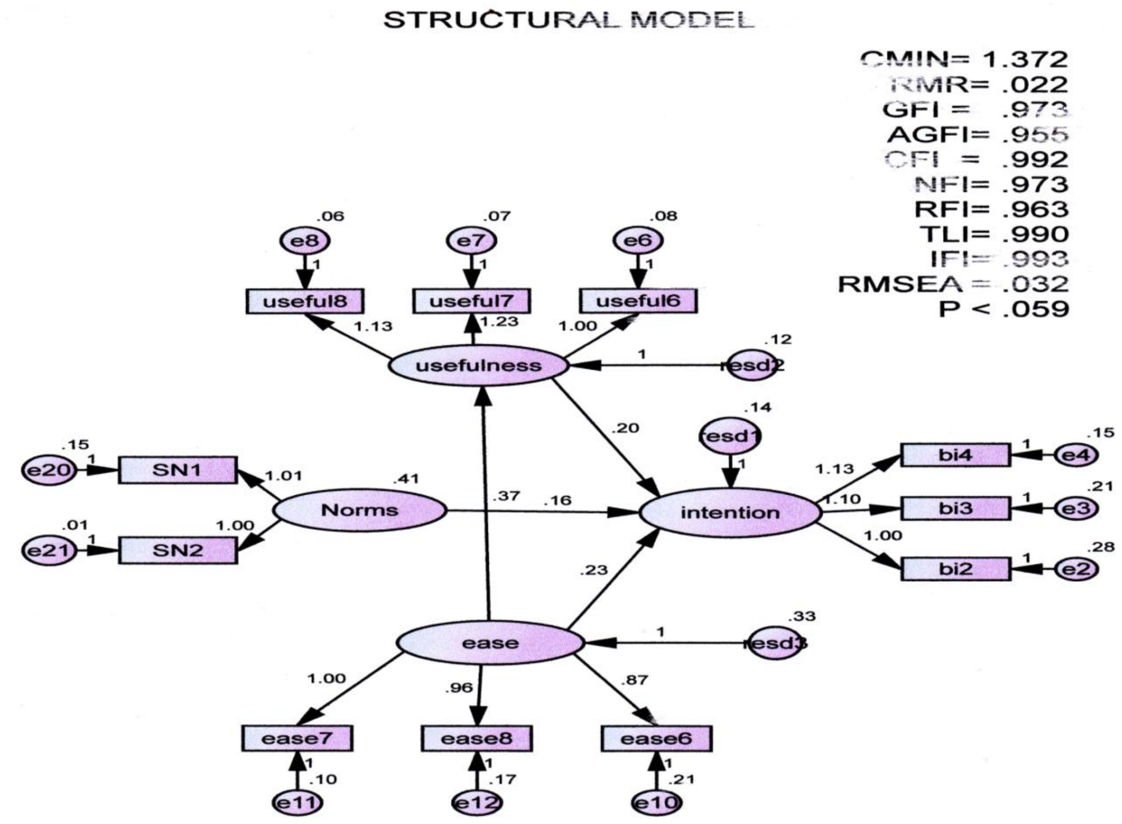

Figure 4.2

The structural model before modification

Figure 4.2
The confirmatory factor analysis and the good of fitness for the structural model.

Therefore, the study conducted modification for the model to manage this misspecification and the result is shown in Table 4.27 and figure 4.2. For more information, refer to (Appendix B1 and B2, the structural model and the modified of the structural model).

Table 4.26
Exploratory Factor Analysis for the Structural Model after Modification of the Model.

Fit index	**Recommended criteria**	**Result of model after modification**
Chi Square (χ^2/ **degrees of freedom)**	< 2.00	1.475
Goodness of Fit **(GFI)**	> .90	.980
Adjusted Goodness of Fit (**AGFI)**	> .90	.960
Normed Fit Index **(NFI)**	> .90	.975
Comparative fit index **(CFI)**	> .90	.992
Root Mean Square Residual **(RMR)**	< .050	.021
Root Mean Square Error of Approximation **(RMSEA)**	< .080	.037
p < 0.050		p < .066

Table 4.26 shows the result of the Exploratory Factor Analysis for the Structural Model. The analysis result of the model seems that the model achieved the good of fitness in that the Chi Square (χ^2/ degrees of freedom) with value (1.475) smaller than the recommended value of < 2.00 (Hair et al, 2010). Goodness of Fit (GFI) with value (.980) exceeded the recommended value of > .90 . Even, the Adjusted Goodness of Fit (AGFI), Normed Fit Index (NFI) and Comparative fit index (CFI) with values (.960, .975 and .992) respectively, exceeded the recommended value of > .90 (Byrne, 2010; Hair et al, 2010). Also, Root Mean Square Residual (RMR) with value (.021) smaller than the recommended value of .050. The Root Mean Square Error of Approximation (RMSEA) with value (.037) smaller than the recommended value of < .080 Byrne, 2010. Finally, the P value for the probability is (.066), which exceeded the recommended value of p < 0.050 Byrne, (2010); Hair et al, (2010); Tucker & Lewis, (1973).

Table 4.27

Modification Indices, Covariance

			M.I.	Par Change
Norms	<-->	ease	8.076	0.061
e8	<-->	e4	7.036	-0.022
e7	<-->	e4	4.802	0.019
e21	<-->	ease	6.892	0.03
e21	<-->	e12	5.673	0.024
e20	<-->	e12	5.415	-0.027

Table 4.28

Modification Indices, Regression Weights

			M.I.	Par Change
SN2	<---	ease	6.892	0.099
SN2	<---	useful8	4.473	0.074
SN2	<---	ease8	9.588	0.082
SN1	<---	ease8	4.97	-0.069

The table 4.27 and table 4.28 show information related to misspecification. It reflects the extent to which the hypothesized model is appropriately described. In the structural model, the analysis pays more intention for the Regression Weights in the Modification Indices. However, by reviewing the parameters in the Covariance and the Regression Weights in the modification indices tables 4. 27 and 4. 28, all the values show that there is no evidence for misspecification in the model and all the values ranges under the recommended value of 10.00 for the well fiting model modification Byrne (2010).

Table 4.29
Standardized Residual Covariance

	ease6	bi4	useful8	bi3	ease8	useful7	bi2	SN2	SN1
ease6	0								
bi4	0.334	0.25							
useful8	-0.017	-0.481	0						
bi3	0.643	0.18	1.019	0.214					
ease8	0	0.244	0.351	1.429	0				
useful7	0.139	0.56	0	0.927	-0.336	0			
bi2	-0.47	0.491	0.133	0.132	0.185	-0.491	0.162		
SN2	2.436	0.931	2.475	0.767	2.385	2.085	0.963	0	
SN1	1.805	0.274	1.608	0.626	0.818	1.383	0.956	0	0

Besides that, Table 4.29 shows the structural model CFI seems that it does not have any evidence for misspecification in the model. All the indicators in the standardized residual covariance did not exceed the recommended value of < 2.58 (Byrne, 2010). Therefore, the model succeed in achieving the well fitting model.

Table 4.30

Model Fit Summary, CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	22	33.916	23	0.066	1.475
Saturated model	45	0	0		
Independence model	9	1382.92	36	0	38.415

NPAR Number of Parameters , CMIN Minimum Discrepancy , DF Degree of Freedom , P Probability Value , CMIN/DF The Ratio of Test Statics.

However, when testing the model good of fitness, the table 4.30 shows the test of the model yielded, a CMIN (X^2) value of 33.916 with 23 degree of freedom and a probability of .066, that means the fit of the data to the hypothesized model is adequate (Byrne, 2010); Hair et al, (2010). CMIN/DF which is related to the confidence intervals, it yielded with value 1.475, in which it must be below 3,000, as recommended in most of the previous studies and by Byrne (2010) and Hair et al, (2010). Therefore, the model succeed in achieving the well fitting model and the data explains the the hypothesized model.

Table 4.31
Model Fit Summary, RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.021	0.98	0.96	0.501
Saturated model	0	1		
Independence model	0.126	0.526	0.408	0.421

RMR Root Mean Square Residual , GFI Goodness of Fit Index , AGFI Adjusted Goodness of Fit Index, PGFI Parsimony Goodness of Fit Index.

Table 4.31 shows that RMR represents the average residual value drived from the fitting of the variance covariance matrix of the hypothesized model to the variance covariance matrix of the sample data. In this model, RMR with value 0.019 successed to meet the recommended value of <.050 which is considered as well fitting model Byrne (2010). Table 4.31 shows the goodness of fit index GFI and AGFI which is adjusted for the number of the degree of freedom, with values .980 and .960 ranged between zero and 1, and the more closer to 1 the more good fit model, both values met the recommended value of >.90 for good fit or >.95 for the very well fitting model Hu and Bentler (1999); Byrne (2010). In another ward, that means the hypothesized model fits the sample data very well. The parsimony goodness of fit index PGFI which is considering the complexity of the model, the number of estimated parameters of the hypothesized model for the assessment the fit overall the model, and it is ranged below .90, in this model PGFI value is 0.501, which it refers to the significant of X^2 (CMIN) Byrne (2010).

Table 4.32
Model Fit Summary, Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	0.975	0.962	0.992	0.987	0.992
Saturated model	1		1		1
Independence model	0	0	0	0	0

NFI Normed Fit Index , RFI Relative Fit Index , IFI Incremental Index of Fit , TLI Tucker-Lewis Index , CFI Comparative Fit Index.

Table 4.32 shows that The Normed Fit Index NFI with vaule 0.975 exceeded the recommended value of >.90 and it considered as well-fitting model. The Comparative Fit Index CFI with value 0.992 exceeded the recommended value of >.90, and is considered as very well-fitting model. The Relative Fit Index RFI with value .962 exceeded the recommended value of >.90, is considered as very good fitting model Hu and Bentler (1999). Finaly, the Incremental Index of Fit IFI and Tucker-Lewis Index TLI with values .992 and .987 respectively, exceeded the recommended value of > .90 and considered as well fit (Hu and Bentler, 1999).

Table 4.33
Model Fit Summary, Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	0.639	0.623	0.634
Saturated model	0	0	0
Independence model	1	0	0

PRATIO, The Initial Parasimony Ratio

Moreover, the table 4.33 shows the PRATIO indice which is related to the parsimony issues. This indice shows that the ratio related to NFI and CFI with putting into account the complexity of the model. These ratio values PRATIO = .639, PNFI= .623 and PCFI= .634 the PRATIO indice which is related to the parsimony issues. This indice shows that the ratio related to NFI and CFI with putting into account the complexity of the model. These ratio values PRATIO.

Table 4.34
Model Fit Summary, NCP

Model	NCP	LO 90	HI 90
Default model	10.916	0	30.599
Saturated model	0	0	0
Independence model	1346.92	1229.04	1472.19

NCP Non-Centrality Parameter

The table 4.34 shows that the fit of the hypothesized model when it centralized between The Saturated model (the high extreme) in which the number of estimated parameters equals the number of data points with zero degree of freedom DF and the independence model (null model or the lower extreme) in which all the correlations among variables are zero. NCP , also, measures the (population badness of fit) discrepancy between the data covariance matrix Σ and the hypothesized covariance matrix [Σ0].In this study, the hypothesized model yield a noncentrality parameter of 10.916 . This value represents the X^2 value (33.916) minus its degree of freedom (23). The confidence interval indicates that we can be confident that the population value of the noncentrality parameter (y) lies between zero and 30.599.

Table 4.35
Model Fit Summary, RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.037	0	0.061	0.796
Independence model	0.324	0.31	0.339	0

(RMSEA) Root Mean Square Error of Approximation

Table 4.35 shows that RMSEA takes into account the square error of approximation to measure how well would be the model, with unknown, but optimal chosen parameter values, fit the population covariance matrix. RMSEA value is 0.037 did not exceed the recommended value of < .080 , with 90% confidence interval ranging between zero and 0.061 with PCLOSE value for testing the closeness of fit equals .796 , and that refers for well fitting model (Byrne, 2010).

Table 4.36
Model Fit Summary, AIC

Model	AIC	BCC	BIC	CAIC
Default model	77.916	79.187	163.226	185.226
Saturated model	90.000	92.601	264.498	309.498
Independence model	1400.924	1401.444	1435.824	1444.824

AIC Akaike Information Criterion, CAIC Consistent version of the AIC , BCC Beowne-Cudeck Criterion, BIC Bayes Information Criterion.

Table 4.36 shows AIC index which it used to address the issue of parasimony in the assessment of the model fit, the statistical good of fitness and the number of estimated parameters. However, CAIC take sample size into account. AIC and CAIC indices which it used in the comparison of two or more models, and that the smaller value represents a better fit of the hypothesized model. In this model, AIC and CAIC have the smallest values 77.916 and 185.226, respectively compared to the Saturated model and Independence model. Similar, BCC and BIC which put into account the complexity of the model, have the smallest values of 79.187and 163.226, respectively. Therefore, these indices proved that this model is a well-fitting model.

Table 4.37
Model Fit Summary, ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.219	0.188	0.274	0.222
Saturated model	0.253	0.253	0.253	0.26
Independence model	3.935	3.604	4.287	3.937

ECVI Expected Cross-Validation Index, MECVI Modified Expected Cross-Validation Index.

Finaly, table 4.37 shows Expected Cross-Validation Index ECVI, which measures the discrepancy between the fitted covariance matrix in the analyzed sample and the expected covariance matrix that would be obtained in another samples from the same size. The model with the smallest ECVI value is considered as the greatest potential for replication. In this model, ECVI value of .219 is the smallest value compared to the Saturated model value of .253 and the Independence model value of 3.935, that represent the best fit to the data (Byrne, 2010).

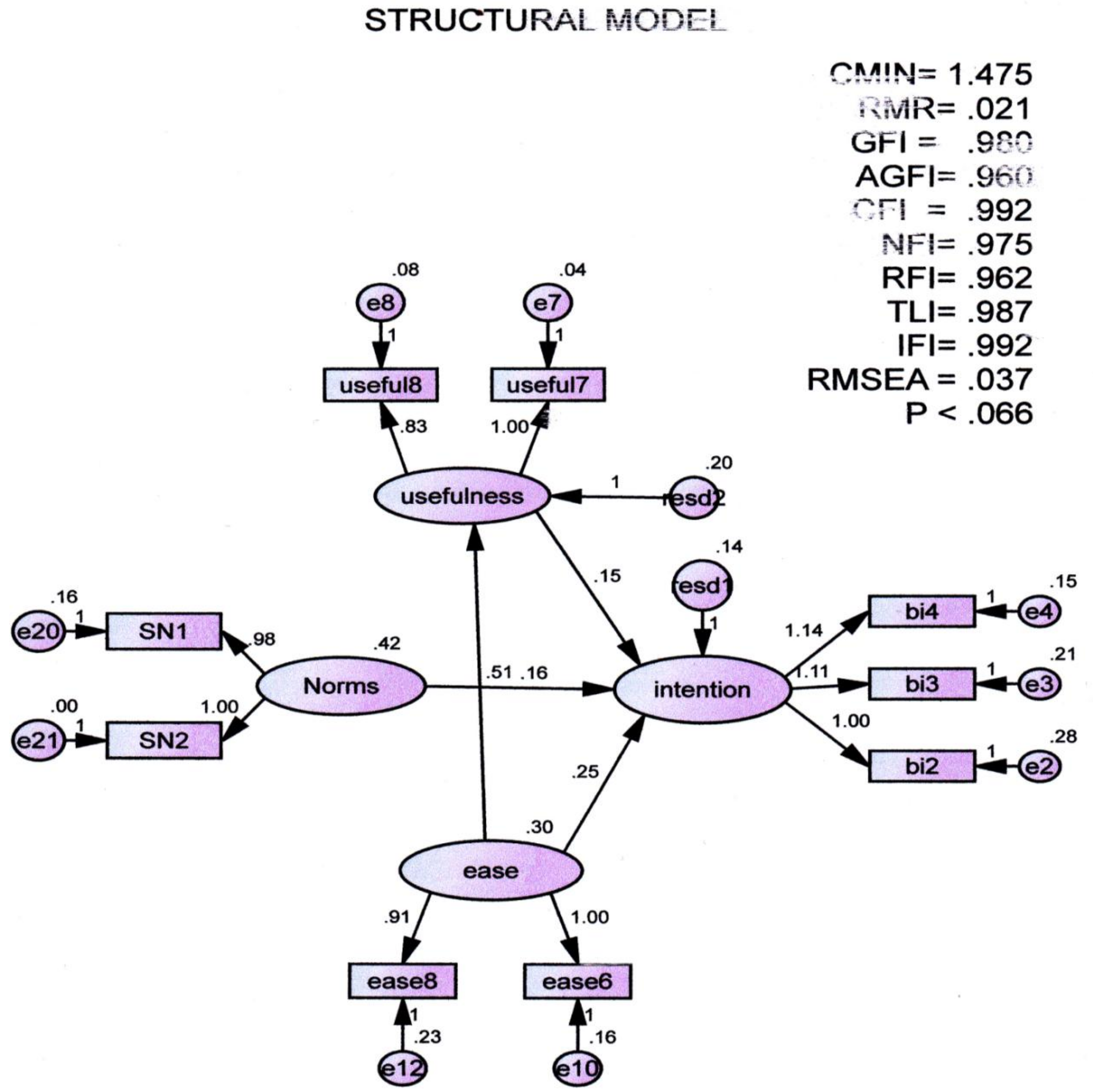

Figure 4.3

The structural model after modification

Figure 4.3
The exploratory factor analysis and the good of fitness for the modified structural model.

4.9 Causal Model

In this model, we looked at the full structural equation model (SEM). The postulated causal relations among all variables in the hypothesized model must be grounded in theory or empirical research. This model is grounded under technology acceptance model TAM2 and TAM3 (united theories). In the measurement and structural models, the focus was in the factorial validity of the measuring instruments. However, in the causal model, the focus was in formulation of the indicators in each construction by formulating approprate combination of items to comprise item parcels. Therefore, in the causal model, 22 item parcel variables were used to measure the causal model. All indictors' validity and reliability were assessed as shown previously in the measurement model.

Table 4.38
*Confirmatory Factor Analysis for the Causal Model***.**

Fit index	**Recommended criteria**	**Result of model**
Chi Square (χ^2**/ degrees of freedom)**	< 2.00	1.326
Goodness of Fit **(GFI)**	> .90	.943
Adjusted Goodness of Fit (**AGFI)**	> .90	.919
Non-Normed Fit Index **(NNFI)**	> .90	.938
Comparative fit index **(CFI)**	> .90	.984
Root Mean Square Residual **(RMR)**	< .050	.020
Root Mean Square Error of Approximation **(RMSEA)**	< .080	.030
p < .001		p < .002

Table 4.38 shows the result of the Confirmatory Factor Analysis for the Causal Model. The result of the model seems that the model achieved the good of fitness in that the Chi Square (χ^2/ degrees of freedom) with value 1.326 is smaller than the recommended value of < 2.00 Hair et al, (2010). Goodness of Fit (GFI) with value .943 exceeded the recommended value of > .90 . Even, the Adjusted Goodness of Fit (AGFI), Normed Fit Index (NFI) and Comparative fit index (CFI) with values .919, .938 and .984 respectively, exceeded the recommended value of > .90 (Byrne, 2010; Hair et al, 2010). Root Mean Square Residual (RMR) with value .020 is smaller than the recommended value of .050. The Root Mean Square Error of Approximation (RMSEA) with value .030 is smaller than the recommended value of < .080 (Byrne, 2010). Finally, the P value for the probability is .002 which exceeded the recommended value of p < 0.001 (Byrne, 2010; Hair et al, 2010; Tucker & Lewis, 1973).

Table 4.39

Modification Indices , Covariance

			M.I.	Par Change
resd2	<-->	Norms	6.092	0.027
e4	<-->	Culture	4.109	0.03
e56	<-->	e4	9.873	-0.044
e56	<-->	e29	4.058	-0.037
e3	<-->	Managment	4.18	0.032
e3	<-->	e29	7.224	-0.046
e53	<-->	Managment	5.04	0.038
e53	<-->	e3	6.902	0.04
e52	<-->	Norms	6.093	0.04
e52	<-->	e56	8.395	0.045
e40	<-->	e4	5.35	0.035
e40	<-->	e29	5.383	0.046
e40	<-->	e3	5.651	-0.038
e40	<-->	e52	10.287	-0.054
e12	<-->	e19	4.813	0.022
e6	<-->	Norms	5.492	0.024
e6	<-->	e46	5.336	0.021
e13	<-->	e40	8.174	0.05
e25	<-->	efficacy	4.768	-0.055
e25	<-->	e11	4.05	0.033
e23	<-->	Government	5.761	-0.055
e21	<-->	e23	4.78	0.033
e20	<-->	resd2	4.162	0.024
e17	<-->	e53	8.248	0.038

Table 4.40
Modification Indices , Regression Weights

			M.I.	Par Change
usefulness	<---	Norms	4.129	0.072
cult22	<---	usefulness	4.207	-0.184
cult22	<---	useful7	4.898	-0.129
GOV5	<---	bi4	6.524	-0.118
bi3	<---	effic3	5.471	0.099
effic3	<---	bi3	4.648	0.096
GOV1	<---	effic1	4.209	-0.093
useful6	<---	Norms	4.2	0.069
useful6	<---	TOP3	4.554	0.047
useful6	<---	SN1	4.322	0.042
effic2	<---	cult22	4.251	0.073
cult16	<---	intention	4.138	0.141
cult16	<---	bi3	4.567	0.098
cult13	<---	efficacy	5.752	-0.148
cult13	<---	bi2	4.616	-0.113
cult13	<---	effic3	5.462	-0.131
cult13	<---	effic1	5.639	-0.124
cult5	<---	usefulness	5.712	0.209
cult5	<---	useful7	5.883	0.138
SN2	<---	cult5	6.219	0.071
SN1	<---	cult22	4.661	-0.083
SN1	<---	cult5	5.77	-0.09
iqua5	<---	effic3	5.53	0.087

Table 4.39 and table 4.40 show information related to misspecification. It reflects the extent to which the hypothesized model is appropriately described. In the casual model, the analysis paid more intention for the Covariance and the Regression Weights in the Modification Indices. However, by reviewing the parameters in the Covariance and the Regression Weights in the modification indices tables 4. 39 and 4. 40, all the values show that there is no evidence for misspecification in the model and all the values ranges under the recommended value of 10.00 for the well fiting model modification (Byrne, 2010).

Table 4.41

Standardized Residual Covariances

	bi4	cult22	GOV5	bi3	bi2	effic3	effic1	TOP5	TOP3	GOV1
bi4	0.04									
cult22	1.17	0								
GOV5	-1.336	-0.676	0							
bi3	-0.012	-0.899	0.203	0.036						
bi2	0.356	0.706	0.304	-0.227	0.027					
effic3	0.036	-0.817	-0.612	1.844	0.073	0				
effic1	-0.315	0.167	0.414	-0.09	-0.963	-0.107	0			
TOP5	0.059	0.109	0.021	1.128	0.207	1.054	-0.545	0		
TOP3	-0.331	0.051	0.286	1.01	-0.286	0.378	-0.347	-0.008	0	
GOV1	0.22	0.639	-0.001	-0.167	1.217	-0.857	-1.01	-0.173	-0.202	0
iqua7	0.103	-0.375	0.203	0.432	0.101	0.032	-0.65	0.429	0.601	0.383
ease8	-0.227	-0.617	0.17	0.84	-0.297	0.209	0.001	-0.628	-0.429	-0.553
ease7	-0.168	-0.837	0.365	-0.113	-0.108	0.44	-0.472	0.185	0.392	-0.19
useful7	0.376	-1.488	-0.604	0.615	-0.732	1.536	-0.824	-0.33	-0.077	0.055
useful6	-0.054	-0.558	0.417	0.29	-0.202	1.143	-0.272	0.417	1.41	0.818
effic2	0.027	1.362	0.047	-0.1	-0.061	-0.124	0.096	0.087	-0.1	0.638
cult16	1.494	0.146	0.443	1.592	1.565	0.014	0.224	0.817	-0.034	0.571
cult13	0.399	0.154	-0.094	-0.243	-0.263	-1.76	-1.558	-0.145	-0.348	0.419
cult5	1.642	-0.418	-0.906	1.257	1.379	-0.55	-0.534	0.2	-0.408	-0.847
SN2	0.428	-0.041	0.481	0.82	0.088	-1.017	0.827	0.671	0.214	0.047
SN1	-0.49	-1.529	-0.289	-0.105	0.343	-1.202	1.367	-0.293	-1.051	-0.039
iqua5	-0.039	-1.543	-0.48	0.933	0.149	1.534	-0.41	-0.508	-0.467	-0.048

Continue *the Standardized Residual Covariances*

	iqua7	ease8	ease7	useful7	useful6	effic2	cult16	cult13	cult5	SN2	SN1	iqua5
bi4												
cult22												
GOV5												
bi3												
bi2												
effic3												
effic1												
TOP5												
TOP3												
GOV1												
iqua7	0											
ease8	0.716	0										
ease7	-0.446	0.004	0									
useful7	-0.456	-0.419	0.111	0								
useful6	-0.714	-0.412	0.662	0.003	0							
effic2	0.212	-0.292	0.282	-0.057	-0.126	0						
cult16	0.562	-0.946	-0.603	0.574	0.314	1.092	0					
cult13	0.458	-0.385	0.678	-0.606	-0.547	-0.319	-0.224	0				
cult5	0.877	-0.277	1.342	1.38	0.901	0.504	-0.019	0.242	0			
SN2	-0.144	-0.092	0.35	0.88	1.923	-0.541	0.993	0.237	1.247	0		
SN1	0.298	-0.454	-0.523	1.679	2.533	0.121	0.527	-0.94	-0.736	0.003	0	
iqua5	0.024	0.263	-0.159	0.273	0.456	-0.158	0.012	-0.543	0.321	-0.784	0.155	0

The Table 4.41 shows that the casual model CFI seems that it does not have any evidence for misspecification in the model. All the indicators values in the standardized residual covariance did not exceed the recommended value of < 2.58 (Byrne, 2010). Therefore, the model succeed in achieving the well fitting model.

Table 4.42
Model Fit Summary, CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	75	236.043	178	0.002	1.326
Saturated model	253	0	0		
Independence model	22	3804.29	231	0	16.469

NPAR Number of Parameters , CMIN Minimum Discrepancy , DF Degree of Freedom , P Probability Value , CMIN/DF The Ratio of Test Statics.

To explain the good of fitness of the model, the table 4.42 shows the test of the hypotheses, yielded a CMIN (X^2) value of 236.043, with 178 degree of freedom and a probability of .0002, and that means, there is an adequate fit of the data on the hypothesized model (Byrne, 2010); Hair et al, 2010). Finally, CMIN/DF which related to the confidence intervals, it yielded with value 1.326, in which it must be below 3,000, as recommended by Byrne (2010) and Hair et al, (2010).

Table 4.43
Model Fit Summary, RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.020	0.943	0.919	0.663
Saturated model	0	1		
Independence model	0.164	0.4	0.343	0.365

RMR Root Mean Square Residual , GFI Goodness of Fit Index , AGFI Adjusted Goodness of Fit Index, PGFI Parsimony Goodness of Fit Index.

The table 4.43 shows that RMR represents the average residual value from the fitting of the variance covariance matrix of the hypothesized model to the variance covariance matrix of the sample data. In this model, RMR with value 0.020 succeeded to meet the recommended value of <.050 which is considered as well fitting model (Byrne, 2010). The goodness of fit index GFI and the adjusted for the number of the degree of freedom AGFI, with values 0.943 and 0.919, both values met the recommended value of >.90 for good fit or >.95 for the very well fitting model Hu and Bentler (1999); Byrne (2010). In another ward, the hypothesized model fits the sample data very well. The parsimony goodness of fit index PGFI considered (the complexity of the model) the number of estimated parameters of the hypothesized model for the assessment of the fit overall the model. In this model PGFI value is 0.663, which exceeded the recommended value below .90 and that refers to the significant of X^2 (CMIN) Byrne (2010).

Table 4.44
Model Fit Summary, Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	0.938	0.919	0.984	0.979	0.984
Saturated model	1		1		1
Independence model	0	0	0	0	0

NFI Normed Fit Index , RFI Relative Fit Index , IFI Incremental Index of Fit , TLI Tucker-Lewis Index , CFI Comparative Fit Index.

Table 4.44 shows that the Normed Fit Index NFI recommended value range from zero to 1.00 with value of >.90 considered as well-fitting model, in this model NFI value 0.938 exceeded the recommended value. NFI showed a tendency to underestimate fit in the small sample, However, NFI was developed by Bentler to take the small sample into account and proposed the Comparative Fit Index CFI (Bentler, 1992). In this model, CFI with value 0.984 which exceeded the recommended with value >.90 is considered as very well-fitting model. The Relative Fit Index RFI, the coefficient value 0.919 which exceeded the recommended value of >.90 is considered as well-fitting of the model. Incremental Index of Fit IFI which address the issues of the parasimony and the sample size, puts in its account the degree of freedom. IFI with value 0.984 which considered as well fit. Tucker-Lewis Index TLI with value 0.979, exceeded the recommended value of >.90 (Hu and Bentler, 1999).

Table 4.45
Model Fit Summary, Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	0.771	0.723	0.758
Saturated model	0	0	0
Independence model	1	0	0

PRATIO, The Initial Parasimony Ratio

Table 4.45 shows the PRATIO indice which is related to the parsimony issues. This indice shows that the ratio related to NFI and CFI which put into account the complexity of the model. These ratio values PRATIO = 0.771, PNFI= 0.723 and PCFI= 0.758 are considereded as good of fit for the model, and the closer to 1.00 the better fitting model (Byrne, 2010).

Table 4.46
Model Fit Summary, NCP

Model	NCP	LO 90	HI 90
Default model	58.043	22.154	102.026
Saturated model	0	0	0
Independence model	3573.29	3377.06	3776.82

NCP Non-Centrality Parameter

In addition, table 4.46 shows that the hypothesized model yield a noncentrality parameter of 58.043 . This value represents the X^2 value (236.043) minus its degree of freedom (178). The confidence interval indicates that we can be confident that the population value of the noncentrality parameter (y) lies between 22.154 and 102.026 (Byrne, 2010).

Table 4.47
Models Fit Summary, RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.03	0.019	0.04	1
Independence model	0.208	0.203	0.214	0

(RMSEA) Root Mean Square Error of Approximation

Table 4.47 shows that RMSEA takes into account the square error of approximation to measure how well would be the model, with unknown, but optimal chosen parameter values, fit the population covariance matrix. RMSEA recommended value of < .080. In this model, RMSEA value is 0.03 with 90% confidence interval ranging between 0.019 and 0.04 with PCLOSE value for testing the closeness of fit equals 1.00, and that refers for well fitting model Byrne (2010).

Table 4.48
Model Fit Summary, AIC

Model	AIC	BCC	BIC	CAIC
Default model	386.043	396.404	676.873	751.873
Saturated model	506	540.949	1487.07	1740.07
Independence model	3848.29	3851.33	3933.6	3955.6

AIC Akaike Information Criterion, CAIC Consistent version of the AIC , BCC Beowne-Cudeck Criterion, BIC Bayes Information Criterion.

Table 4.48 shows AIC index which is used to address the issue of parasimony in the assessment of the model fit, the statistical good of fitness and the number of estimated parameters. However, CAIC takes sample size into account. AIC and CAIC indices which are used in the comparison of two or more models, the smaller value represents a better fit of the hypothesized model. In this model, AIC and CAIC have the smallest values 386.043 and 751.873, respectively compared to the Saturated model and Independence model. Similarly, BCC and BIC which put into account the complexity of the model, have the smallest values of 396.404 and 676.873, respectively. Therefore, these indices proved that this model is the well-fitting model.

Table 4.49
Model Fit Summary, ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.084	0.984	1.208	1.113
Saturated model	1.421	1.421	1.421	1.52
Independence model	10.81	10.259	11.382	10.818

ECVI Expected Cross-Validation Index, MECVI Modified Expected Cross-Validation Index.

Finaly, table 4.49 shows Expected Cross-Validation Index ECVI, which it measures the discrepancy between the fitted covariance matrix in the analyzed sample and the expected covariance matrix that would be obtained in another samples from the same size. The model with smallest ECVI value is considered as the greatest potential for replication. In this model, ECVI value of 1.084 was the smallest value compared to the Saturated model value of 1.421 and the Independence model value of 10.81, that represented the best fit to the data (Byrne, 2010).

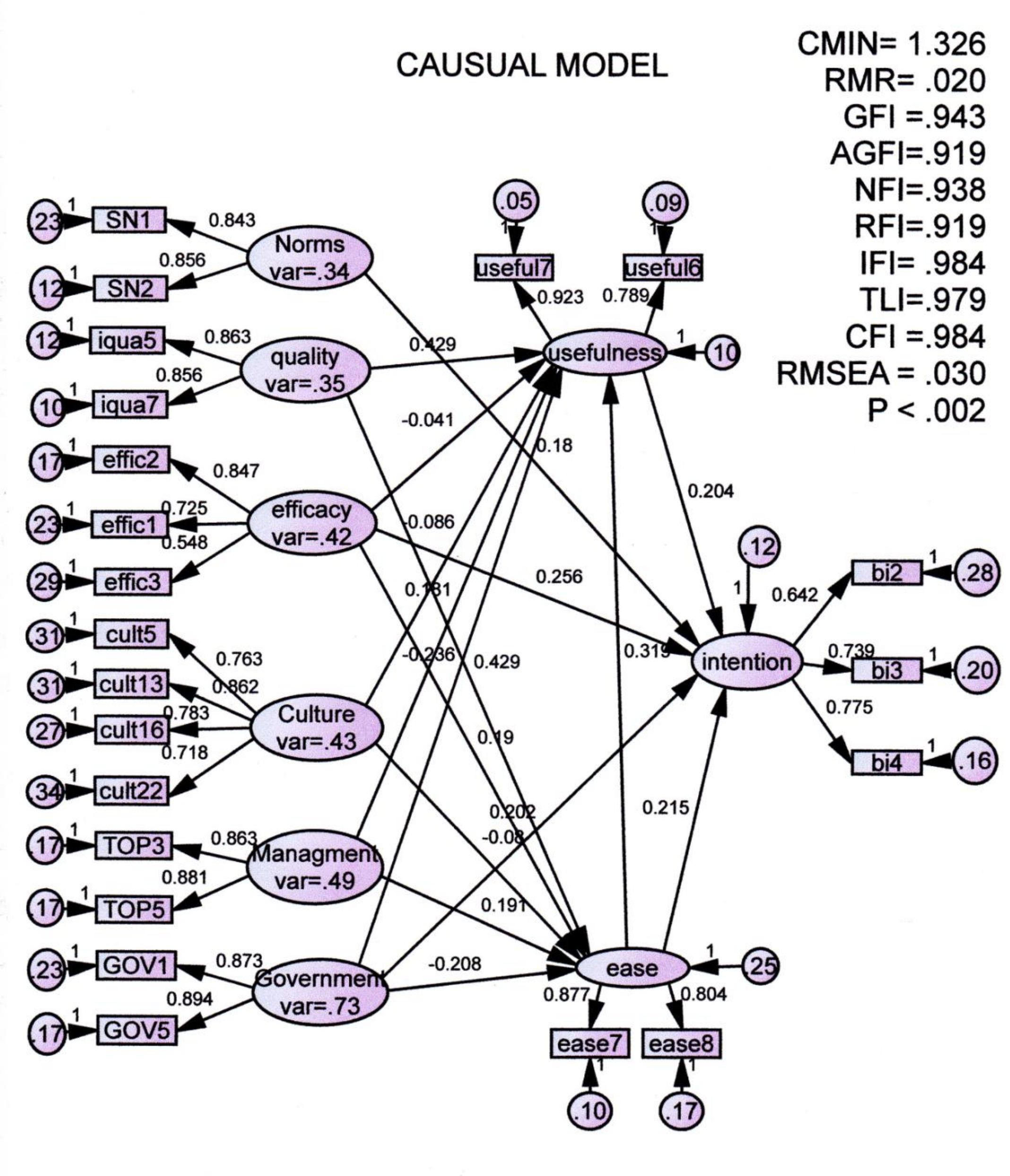

Figure 4.4

The confirmatory factor analysis and the good of fitness for the causal model.

In addressing the final result of the whole model, this model examined the paths coefficient between the latent variables (exogenous variables and endogenous variables) to explain the usage of information technology in the Yemeni government sector. The table 4.50 shows that all factors path coefficients are significant except for organization culture with perceived ease of use and perceived usefulness (Y = .08, T-value = 1.038; Y = .09, T-value = 1.192, respectively). Self-efficacy with perceived usefulness is non-significant (Y = .041, T-value = .679). However, the coefficients show that the data support all hypotheses except three hypotheses that are rejected. Moreover, there are more explaintions for table 4.50 in the Hypotheses Evaluation section.

Table 4.50
Path Coefficients and the Result of the Hypotheses

Structural path	Standardized coefficient	T- value	Hypothesis direction	Hypothesis result
Efficacy - ease	.19	2.918	+	Supported
Efficacy - usefulness	- .041	-0.679	+	Rejected
Efficacy - intention	.256	3.829	+	Supported
Quality - ease	.429	6.228	+	Supported
Quality - usefulness	.402	5.41	+	Supported
Culture - ease	- .08	-1.038	-	Supported
Culture - usefulness	- .086	-1.192	-	Supported
Management - ease	.191	2.081	+	Supported
Management - usefulness	.181	2.044	+	Supported
Government - ease	- .208	-2.427	-	Rejected
Government – usefulness	- .236	-2.852	-	Rejected
Government - intention	.202	3.249	+	Supported
Ease - usefulness	.319	4.544	+	Supported
Ease - intention	.215	2.84	+	Supported
Norms - intention	.18	2.785	+	Supported
Usefulness - intention	.204	2.916	+	Supported

4.10 Hypotheses Evaluation

H1: Perceived ease of use has a positive effect on the intention behavior to use a particular system.

From the result, perceived ease of use has a significant positive effect on the intention behavior to use ($Y = .215$, T-value = 2.84, $p < .002$) exceeding the recommended T-value = 1.96 of the significant relation (Byrne, 2010). This means that for every increase in perceived ease of use (the latent endogenous variable) by one, the intention of use (the latent endogenous variable) increases by .215 standard points. In other words, perceived ease of use is a significant predictor for employees and manager's intention to use the information technology system.

This result seems to be consistent with previous studies (e.g. Almutairi, 2007; Chung, Skibniewski Jr., & Kwak, 2008; Kishore, McLean, 2001; Tarcan, Vatol, & Toker, 2010; Venkatesh & Morris, 2000). However, this study did not find support for that by Li, Hess, Mcnab, and Yu (2009), who found that perceived ease of use did not have a significant direct relationship with intention but it had an indirect relationship through its impact on perceived usefulness.

H2: Perceived ease of use has a positive effect on perceived usefulness of a particular system.

From the result, perceived ease of use has a significant positive effect on perceived usefulness (Y = .319, T-value = 4.544, $p < .002$) exceeding the recommended T-value= 1.96 of the significant relation (Byrne, 2010). This means that for every increase in perceived ease of use (the latent endogenous variable) by one, perceived usefulness (the latent endogenous variable) increases by 0.319 standard point. In other words, perceived ease of use is a significant predictor of perceived usefulness. Perceived ease of use has a stronger effect on perceived usefulness (Y = .319, T-value = 4.544) than on behavioral intention to use (Y = .215, T-value = 2.84). This result is thus consistent with previous studies that found perceived ease of use has a significant relation with perceived usefulness (e.g. Almutairi, 2007; Chung, Skibniewski Jr., & Kwak, 2008; Singktarv, Akbulut, & Houston, 2002; Tarcan & Vatol & Toker, 2010). However, this study did not provide support for Shih and Huang’s (2009) study, which found that perceived ease of use does not have a positive direct effect on perceived usefulness.

H3: Perceived usefulness has a positive effect on behaviour intention to use a particular system.

The result provides support for the positive effect perceived usefulness has on behaviour intention to use (Y = .204, T-value = 2.916, $p < .002$). For every increase in perceived usefulness (the latent endogenous variable) by one, behaviour intention to use (the latent endogenous variable) increases by 0.204 standard point, which means that the employees and the managers in the government sector perceive the information system to be useful. As expected, perceived usefulness is a significant predictor of behavioral intention to use. The result is consistent with previous studies (e.g. Chung, Skibniewski Jr., & Kwak, 2008; Li et al., 2009; Tarcan, Vatol, & Toker, 2010). However, this study did not lend support to several previous studies by Goeke, (2006) and Pikkarainen, Pikkarainen, Karjaluoto, & Pahnila, (2004) which found that usefulness was stronger than ease of use in affecting the intention to use.

H4: Self-efficacy has a positive effect on perceived ease of use of a particular new system.

The result supports the hypothesis that self-efficacy has a significant positive effect on perceived ease of use ($Y = .190$, T-value = 2.918, $p < .002$). For every increase in self-efficacy by one, the perceived ease of use increases by .190 standard point. It seems that the employees and managers in the public sector perceived that they have the abililty to use the information technology and they perceived it as it is easy to use. The result also indicated that perceived self-efficacy is a significant predictor of perceived ease to use for the information technology . The result is in line with previous studies that found that computer self-efficacy is a significant determinant of perceived ease of use (e.g. Hwang & Yi, 2003; Park et al., 2006; Sharp, 2006). The result also provides support for the study conducted by Gong, Xu, and Yu (2004), who revealed that self-efficacy has a strong direct effect on intention to use and perceived ease of use. However, the result of this study did not support the study conducted by Shih, Fang (2006) who found that self-efficacy does not have a positive relation with perceived usefulness and a positive relation with perceived ease of use.

H5: Self-efficacy has a positive effect on perceived usefulness of a particular new system.

Unexpectedly, the hypothesis was rejected and self-efficacy has a negative non-significant effect on perceived usefulness (Y = -.041, T-value= -.679, $p < .002$). It seems that the information technology the employees and managers use is not perceived as being useful regardless of whether or not employees and managers in the public sector have self-efficacy (the ability to use the technology). This result is consistent with the previous study conducted by Shih, fang (2006) who found that self-efficacy does not have a positive relation with perceived usefulness and a positive relation with perceived ease of use. The result also supports other studies (e.g. Chau, 2001; Klopping & McKinney, 2006) that demonstrated the insignificant effect of computer self efficacy on beliefs.

However, the present study found that self-efficacy has a significant positive effect on behavioral intention to use the information technology. In other words, the employees and managers perceived the information technology is easy to use and hence intend to use it. However, they perceived this information technology as being not useful probably due to the non-integrity of the tiny sub-system which composes the information system. But this problem could be solved by using web service system to integrate or make communication among these sub systems possible even if it is designed with different programming languages.

H6: Information quality has a positive relationship with perceived ease of use toward the system usage.

As expected, the result supports the hypothesis and information quality was found to have a significant positive effect on perceived ease of use (Y = .429, T-value = 6.228, $p < .002$). For every increase in information quality by one, the intention of use increases by .429 standard point. This result is consistent with that reported in previous studies (e.g. Algahtani, 2004; Ahn, Ryu, & Han, 2007; Mohd, Syed Mohamad, & Zaini, 2005; Saeed & Helm, 2008) which found that information quality has a significant impact on perceived usefulness and perceived ease of use toward using the system.

H7: Information quality has a positive relationship with perceived usefulness toward the system usage.

The result supports the hypothesis and information quality was found to have a significant positive effect on perceived usefulness (Y = .402, T-value = 5.41, $p < .002$). For every increase in information quality by one, the intention of use increases by .429 standard points. This result is consistent with that in previous studies (e.g. Algahtani, 2004; Ahn, Ryu, & Han, 2007; Mohd, Syed Mohamad, & Zaini, 2005; Saeed & Helm, 2008) which found that information quality has a significant impact on perceived usefulness and perceived ease of use toward using the system. The study found that information quality has more effect on perceived ease of use (Y = .429, T-value = 6.228) than perceived usefulness (Y = .402, T-value = 5.41).

H8: Subjective norm has a positive effect on intention to use a particular system.

The result supports the hypothesis and subjective norm has a significant positive effect on intention to use ($Y = .180$, T-value = 2.785, $p < .002$). For every increase in subjective norm by one, the intention of use increases by .180 standard point. This result is consistent with that in previous studies (e.g. Chung, Skibniewski Jr., & Kwak, 2008; Schepers & Wetzels, 2007; Wu et al., 2008) which found a strong effect of subjective norm on intention to use. It seems that important people in the government sector have positive influence on the employees and managers' intention to use the technology because these people are usually better educated and have high positions in the government.

H9: Culture has a negative effect on perceived ease of use toward the usage of a particular system.

H10: Culture has a negative effect on perceived usefulness toward the usage of a particular system.

As expected, the result supports the hypothesis that culture has a non- significant negative effect on perceived ease of use (Y = -.08, T-value = -1.038, $p < .002$). For every increase in culture by one, perceived ease of use decreases by .08 standard points. The result also supports the hypothesis that culture has a non-significant negative effect on perceived usefulness (Y = -.086, T-value = -1.192, $p < .002$). For every increase in culture by one, perceived usefulness decreases by .086 standard points. Both results are consistent with those in previous studies (e.g. Li, Hess, Mcnab, & Yu, 2009; Yeniyurt & Townsend, 2003; Yoon, 2009; Zakour, 2004) in that there is cultural resistance to technologies (Brown et al., 1998).

People with low level of uncertainty avoidance, use information technology more than people with high level of uncertainty avoidance Yoon, (2009) and Vance, Cosaque, Straub, (2008). Furthermore, high uncertainty avoidance contributes in the affect of the culture on the intention to use by Y = 0.718, T-value = 0.918, $p < .002$. For every increase in the Power distance by 0.718, the culuture increases by 0.918, which caused negative affects on the intention to use, that was supported by Yeniyurt and Townsend (2003).

In a high uncertainty avoidance culture, people may not be inclined to use the new information technology, as the society with high power distance is not open to new ideas and products. Therefore, lower acceptance of using the new technology in these societies is expected. However, power distance and individualism have positive affect on the culture which cuase negative effects on intention to use throughout ease of use and usefulness (Yeniyurt and Townsend, 2003).

Beside that, Power distance contributes in the affect of the culture on the intention to use by $Y = .862$, T-value = 1.427, $p < .002$. For every increase in the Power distance by .862 culture increases by 1.427, which caused negative affects on intention to use, and that was supported by (Yeniyurt and Townsend, 2003). This expected result was due to the fact that employees and managers in the government sector in a high power distance society that may attribute to the lack of usage of the new information technology to the lack for training and knowledge about the new technology. They may also not complain about the current way of performing their daily work.

Moreover, individualism is contributting in the affect of the culture on the intention to use by ($Y = .763$, T-value = 1.000, $p < .002$). For every increase in the individualism by .763 points, culture increases by 1, which it caused negative affects on intention to use, and that was supported by Li, Hess, McNab, Yu, (2009).

In addition, masculinity/femininity contributes in the affect of the culture on the intention to use by (Y = .783, T-value = 0,991, p < .002). For every increase in the masculinity/femininity by .783, the culture increases by 0,991, which caused negative affects on intention to use, that was supported the study conducted by Li, Hess, McNab, Yu, (2009).

H11: Top management support for particular system has a positive effect on perceived ease of use among government employees and managers toward using information technology.

The hypothesis was supported as top management support was found to have a significant positive effect on perceived ease of use (Y = .191, T-value = 2.081, p < .002). For every increase in top management support by one, perceived ease of use increases by .191 standard points. It seems that the top management supports the adoption for any new technology as it could enhance the productivity and work accomplishment. Hence, this result is consistent with that in previous studies (e.g. Hamdy & Al-Enezi, 2009; Kwan & Wang, 2009; Nathan, Apigian, Nathan, & Tu, 2004; Wu et al., 2008) which found that top management support has a positive direct effect on perceived usefulness and perceived ease of use.

H12: Top management support for a particular system has a positive effect on perceived usefulness of government managers and employees toward using the information technology.

As expected, the result supports the hypothesis. Top management supports has a significant positive effect on perceived usefulness (Y = .181, T-value = 2.044, $p < .002$). For every increase in top management support by one, perceived usefulness increases by .181standard point. This result is consistent with that in previous studies (e.g. Hamdy & Al-Enezi, 2009; Shih & Huang, 2009; Wu et al., 2008).

H13: Government support for a particular system has a positive effect on perceived ease of use of the government managers and employees toward using the information technology.

H14: Government support for a particular system has a positive effect on perceived usefulness of the government managers and employees toward using the information technology.

Unexpectedly, both the hypotheses were rejected as the government support has a negative significant effect on perceived ease of use (Y = - .208, T-value = -2.427, $p < .002$) and perceived usefulness (Y = -.236, T-value = -2.852, $p < .002$), which means that for every increase in government support by one, perceived ease of use decreases by -.208 standard points, and for every increase in government support by one, perceived usefulness decreases by -.236 standard points.

However, this study found that there is positive significant direct effect of government support on behaviour intention to use (Y = .202, T-value = 3.249, $p < .002$). This means that for every increase in government support by one, behaviour intention to use increases by .202 standard points. This result is consistent with that found in previous studies (e.g. Besley, Burgess, 2002; Wang , Chen, 2006; Kwan & Wang, 2009; Nathan, Apigian, Nathan, & Tu, 2004; Park et al., 2006).

Clearly, when the individuals in the government sector receive government support in adopting the information technology from the government program, the government information technology strategy and the e-government program, they develop the intention to use the technology. However, they perceived the technology as not being easy to use or useful probably due to two reasons:

1. The adoption of information technology infrastructure in the government utilities is still under way and there is currently no electronic integration among the government utilities that makes it possible to perform their work. The lack of integration signals lack of government support.

2. The civil war that is presently confronting Yemen for five years have made individuals dissatisfied with the government. Therefore, the negative perception developed in the technology might reflect such dissatisfaction toward the government efforts.

Summary

This chapter has presented the results of the study. Firstly, it has described the background characteristics of the participants in this study through frequency counts. Secondly, it has shown that the measurements used in the present study were valid and reliable. Next, the causal model tested using structural equation modeling indicates goodness of fit. However, out of the 14 hypotheses developed in this study, three were rejected unexpectedly. No significant evidence was found to show that self-efficacy affects perceived usefulness, and government support influence both perceived ease of use and perceived usefulness. The following chapter explains and discusses the result in more detail.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.0 Introduction

This chapter discusses the finding of the study by relating them with the research questions. This chapter also presents the theoretical contribution , methodological contribution, limitations of this study and the recommendations for the practitioners, especially the employees and managers in the government sector including the top managers who formulate the strategies in their organizations. In addition, this chapter offers some suggestions for future studies.

5.1 Discussion of Findings

Organizations are investing in the information technology and providing all the necessary requirements such as hardware, software, system and the infrastructure support in order to improve the efficiency and productivity of the organization. However, if individuals under or over estimate available resources, they might take poor usage decision of the information technology. Therefore, in order for organizations to address these issues, it is important to measure the usage level of the acceptance of the information technology. The level of usage, however, could be explained by the level of perceptions and believes such as ease of use, usefulness and the intention to use towards the actual usage.

In sammary, the findings in this study provide explanation for the usage of the new information technology among employees and managers in the Yemeni government sector by using the information technology acceptance theory and united theories (TAM2 and UTAUT). Based on the analyses, the model showed good of fitness of the measurements. It was also found that the structural and causal model can explain the employee's and manager's usage and adoption of information technology.

Consistent with the findings of previous studies (e.g. Algahtani, 2004; Ahn, Ryu, & Han, 2007; Mohd, Syed Mohamad, & Zaini, 2005; Saeed & Helm, 2008), perceived usefulness and perceived ease of use are the important determinants of behavioral intention to use, and they mediate the relation between the external independent variables and the dependent variable of intention to use. In this study, perceived usefulness and perceived ease of use were found to have a positive significant effect on the intention to use the information technology and perceived ease of use has direct and indirect effects on the intention to use the information technology. However, the path coefficient showed that perceived ease of use has a stronger effect on the intention to use than perceived usefulness (Y = .319, T-value = 4.544) & (Y = .215, T-value = 2.840). Respectively, this result is consistent with (Kwan & Wang, 2009; Jones & Hubona, 2005; Klloppiing & McKiney, 2004). In another ward, employees accept to use the information technology after they perceived it to be useful and easy to use (Davis, 1989).

Perceived ease of use was shown to have the strongest direct effects on perceived usefulness in this model compared to the study conducted by Shih and Huang's (2009). In addition, it seems that employees and managers in the public sector who have some sort of background in information technology or have respectful background about the technology found that using the technology in their daily work makes the work processes more smooth and easer to fullfil their tasks and perceived that the information system is easy to use, which contributes to the new information technology being perceived to be useful.

Parallel with previous studies (e.g. Hwang & Yi, 2003; Park et al., 2006; Sharp, 2006; Gong, Xu, and Yu (2004), the present study showed that individual characteristics or individual differences (self-efficacy) has a significant positive effect on perceived ease of use because employees and managers believe that they are able to use the sub-systems in different units in the organization. However, computer self-efficacy was found to have an insignificant effect on perceived usefulness which is consistent with Igbaria and Iivari, (1995). This may be because the information system is composed of sub-systems working together that are not synchronized or integrated effectively. When this happens, the employees and managers perceive the system as not being useful. But the problem of integrity of the multi-systems involving many softwares and databases can be effectively solved by using a web service system to enable communication among these sub-systems functional even if it designed with different programming languages. Computer self-efficacy makes a difference in the perception among individuals about technology; those with high computer self- efficacy may be technology literate than those with low self efficacy.

The present study also showed that system characteristics (information quality) has a strong, significant, and positive effect on both perceived usefulnes and ease of use towards the acceptance of the information technology. This finding is consistent with previous studies that demonstrate similar result (e.g. Algahtani, 2004; Ahn, Ryu, & Han, 2007; Mohd, Syed Mohamad, & Zaini, 2005; Saeed & Helm, 2008), This offers more support for the employees and managers to use and adopt the information technology despite the non-integrity among the sub-systems. In other ward, the employees and managers perceived that it is easy to get good, quality and useful information for their daily work. Therefore,when they are satisfied with the result obtained from using the technology, this will encourage them to use the information technology.

The study also found that social characteristics (subjective norms) have a significant positive effect on behaviour intention to use the technology. This finding is consistent with previous studies that demonstrate similar result (e.g. Chung, Skibniewski Jr., & Kwak, 2008; Schepers & Wetzels, 2007; Wu et al., 2008). This shows that the use of the information technology by employees and managers in the Yemeni government sector is influenced much by people who are perceived to be important to them.

Consistent with previous studies (e.g. Li, Hess, Mcnab, & Yu, 2009; Yeniyurt & Townsend, 2003; Yoon, 2009; Zakour, 2004), culture was found to have negative influence on perceived usefulness and ease of use towards using the information technology. However, cultural dimensions of power distance, individualism, and masculinity were shown to have positive effects on intention to use. The result suggests that culture plays an important role in formulating the perception of the individual in the society (Merchant, 2007), and in this case in shaping individuals' behaviour towards using or adopting the information technology.

The result further showed that employees and managers in the government sector are high uncertainty avoidance. However, people with low level of uncertainty avoidance were found to use information technology more than those with the high level of uncertainty avoidance. The finding seems to indicate that high power distance societies are not more open to new ideas and products (Yeniyurt and Townsend, 2003). Therefore, lower acceptance of using the new technology in these societies is expected. Furthermore, employees and managers in the government sector in high power distance societies may regard the low usage of the new information technology to the lack for training and knowledge about the new technology. In this context, culture therefore explains why employees and manager do not perceive information technology as being easy to use or useful.

As expected, top management support was found in this study as a critical factor affecting the acceptance and the adoption of the information technology. This finding is parallel with other findings reported earlier in the literature (e.g. Hamdy & Al-Enezi, 2009; Kwan & Wang, 2009; Nathan, Apigian, Nathan, & Tu, 2004; Wu et al., 2008; Shih & Huang, 2009). In another words, when top management provides the necessary support to facilitate the adoption and use of the new technology, other organizational members will embrace the technology in their work despite the difficulties and challenges they face at work. However, they considered the current government efforts in supporting the usage of the technology as not being useful because the government was perceived not to provide the necessary facilities (e.g. internet, hardware's and software's) to support the usage of the technology.

In addition to top management support, the result showed that employees and managers in the Yemeni government sectors perceived support of the government is important in the adoption of the information technology such as the e-government. The finding is consistent with previous studies that show similar result (e.g. Besley, Burgess, 2002; Wang , Chen, 2006; Kwan & Wang, 2009; Nathan, Apigian, Nathan, & Tu, 2004; Park et al., 2006).

5.2 Theoretical contribution

The contribution of this reseach, in the theoretical prospective, lies in identifying some factors such as organization culture and government support that could be important in their influence on the acceptance for new information technology, particulary in the public sector of the republic of Yemen.

This study was conducted to find empirical support for the model of technology acceptance (TAM2) and the unified theory of acceptance and use of technology (UTAUT) within the public sector of the republic of Yemen, to examine technology acceptance and utilization issues among public employees to improve the success of IS implementation in this arena, and to explore organization culture and the government role in supporting the adoption of information technology within the public utilities employees either as a strategy or as logistic support.

This research contributes to the theoretical grounds of information technology acceptance by testing the capability of the technology acceptance model for generlizing and explaining the usage of the new technology. This reseach contribute to the theoretical grounds of information technology acceptance by studying the success factors that provide empirical assessment of the critical factor in the technology acceptance model. These factor catogrized in four catogries: (1) indvidual characteristics such as self-efficacy, (2) social characteristics such as subjective norms and organization culture, (3) technology characteristics such as information quality; and (4) institutional charactrestics such as top management support and government support.

This research contributes to the theoretical grounds of information technology acceptance by combining technology acceptance model (TAM2) with the unified theory of acceptance and use of technology (UTAUT) to provide better explanation for the affect of organization culture on technology acceptance and to overcome the shortcoming in TAM2, which does not consider the effect of social influence such as culture (Venkatesh, Morris, Davis, & Davis, 2003).

From the managerial perspective, this research not only contributes to the theoretical grounds. Its also contributes to the empirical knowledge to increase the success rate for accepting or adopting the information technology in the government sector in the Republic of Yemen. This research validates the importance of organization culture, subjective norms, government support, top management support, information quality and self-efficacy in influencing the behaviour intention to use towards the actual usage for the information technology. The existance of government support, subjectives norms, and self-efficacy factors are essencial to drive the managers and employees preceptions and believe to use the technology more than other factors. This research proved that these factors hold true in the Republic of Yemen. This prove, therefore, it support the notion that technology acceptance model could be generalized in middle east settings and hence the reliance to the effors that testing western finding in the local organizations with local samples.

However, the findings showed that government support has significant negative affects on perceived usefulnes and perceived ease of use in the acceptance for the technology consistent with the studies conducted by Besley, Burgess, (2002). However, government support has significant positive affects in the intention to use the technology that was supported in the studies conducted by (e.g. Besley, Burgess, 2002; Wang , Chen, 2006; Kwan & Wang, 2009; Nathan, Apigian, Nathan, & Tu, 2004; Park et al., 2006).

This study has mentioned perceived gap in the technology acceptance literature in the middle east in particular, in the Republic of Yemen and responding to calls that support that technology acceptance lacks empirical research and there are needs for understanding its factors and their influences in the acceptance for the technology. This study tested the validity and relability of the technology acceptance scales in the public sector of Yemen, which adopted from the orginal theory or the studies which undertook the orginal theory in their studies.

This research is one of the very few technology acceptance studies in the middle east region. In Yemen, this is the first research effort to investigate the factors that effect the acceptance of information technology in the public sectors in the Republic of Yemen. The empirical research has extended understanding of the four main catogries factors of information technology acceptance (1) indvidual charactrestics (2) social charactrestics (3) technology charactrestics (4) institutional charactrestics componants and their impact on the acceptance for the information technology which have not been addressed together in previous studies in Yemen.

5.3 Methodological Contribution

From the methodological prospective, this study has contributed to Methodological grounds in that, most of the literatures on technology acceptance have focused on the behavior intention to use the technology since the behavior intention is the merely or only determined related to actual use for the system Davis et al., (1989); Kiraz & Ozdemir, (2006).

In the technology acceptance model (TAM) which consists of four main factors as major determinants of technology acceptance. These factors are perceived ease of use, perceived usefulness, attitudes towards usage, and behavioral intention to use, and the external variable subjective norms and self-efficacy in technology acceptance (TAM2). Davis developed a reliable and valid scale to measure these factors. However, these scales were developed in different countries in the private sector. To show robustness and validity of the measurements, they suggested that the instrument should be tested with different groups and different settings. In response to their suggestion, this study assessed the applicability of these scales and tested it in the public sector in the Republic of Yemen.

The scope of technology acceptance study has to be extended to various contexts, that was suggested by (Venkatesh, Morris, Davis, & Davis, 2003). Therefore, in this study, the public sector was selected as the context of the technology acceptance study. The positive result in this current study strengthens the methodology by adding a new setting and research context.

However, this study supports the study conducted by Venkatesh, (2000) which mentioned about the important to a locate another scales for measuring the subjective norms indicator. In this study, the reason was due to the high errior correlation between the two scales of the subjective norms and another factors scales, especially the organization culture factor scales which did not tested in the orginal theory (TAM).

According to Agarwal, there are four factors catogries that influenced the technology acceptance. These factors categories are indvidual charactrestics, social charactrestics, technology charactrestics, institutional charactrestics. Most of the previous studies focused in one or two factors categories. In this study, however, the study inclueded the four factors categories following the unified theory of acceptance and use of technology (UTAUT).

Based on the recommendation from the previous studies Al-Gahtani, (2004); Gorke, (2006); Yalcinkaya, (2007); Almutairi, (2007); Loo, Yeow, and chong (2009); kim, lee, law, (2007); Smith (2008); Agarwal (2000), this study tested the validity of the set construct (self-efficacy, subjective norms, organization culture, information quality, top management support and government support) which influence the technology acceptance. At long last after factor analysis was run, all the indecators loading in their construct as explained in chapter four.

5.4 Limitations of the Study

Some limitations of the present study are noteworthy to be highlighted, as follows:

1. This research included all employees and managers in the government sector who are currently using the information technology and those who seldom use the technology. The studies confronted some difficulties in getting permission or distribute the questionnaire in some utilities due to the underestimator for the academic research. However, the study succeeded in distributing the questionnaire in these utilities by using personal communication and permissions from the top management in these utilities.

2. The study planned to collect the data using both qualitative and quantitative methods so that the data gathered could have been more varied and rich Alsohybe, (2007) to enable the researcher to provide qualitative explanations for the information technology acceptance in the government sector. However, due to the current situation in Yemen, such approach was not feasible. In other words, the conflict that currently exists in Yemen prevented the researcher from conducting interviews with the target sample (top management and officials in the government). However, the study succeeded in obtaining the valid finding by using one method which is quantitative methods to achieve the study goals.

3. The study found that self-efficacy, a cognitive belief of an individual about his/her ability to manage information technology, did not receive significant result. One of the reasons for this may be due to the weaknesses of the indicators used to measure this factor. As mentioned by previous authors Eastin, Larose, (2000), it is difficult to measure cognitive belief. Therefore, the study recommends that future studies choose carefully strong indicators of this variable.

5.5 Practical Recommendations of Study

There are some recommendations for the practitioners and the officials in the Yemeni government who are in charge of decision making and formulating the information technology strategy. Since the information technology is developing rapidly, it is important for them to understand the drivers (variables) that influence the acceptance of any new technology. In particular, those in charge should make sure that the technology adopted, be it the hardware or software, is perceived to be useful and easy to use to encourage users to accept and finally use the technology. If the technology is perceived to be useless and difficult to use, any investment made by those in authority will not yield any return as expected and such investment is a waste of resources, time and effort. This means that before implementing and installing the new technology, some feasibility studies need to be carried out first Smith , Green, (2002).

5.6 Recommendations for Future Studies

With regards to future studies, the following recommendations are proposed:

- The scope of the study targets the individuals in the government sector. Therefore, future researchers can consider conducting studies in the private sector individuals or carry out comparative studies between the public sector and private sector in the republic of Yemen or any country.

- This study used quantitative method for collecting the data and could not conduct qualitative data due to the conflict between the political partiesand the civil war, which prevented this study from conducting the necessary interviews with the relevant individuals. Thus, future studies could consider employing qualitative methodology to gether qualitative information on technology acceptance.

- This study has shown some important factors that could influence an individual's intention towards the usage of the new information technology. However, it is possible that other factors, such as training that was not considered in this study, may also be responsible in determining technology acceptance. By doing so, our knowledge on the factors that influence technology acceptance could be widened.

5.7 Conclusion

The study has provided empirical evidence for the effect of some determinants on acceptance of the technology in the government sector. In particular, it has managed to reveal that organizational culture, government support, subjective norms, top management support, information quality and computer self-efficacy play an important role in influencing technology acceptance. As such, the findings validate TAM theory and demonstrate the applicability of this theory to the Middle Eastern context, particularly in the Republic of Yemen. This study has important implications to practitioners and managers on the need to carefully consider the factors that could promote the use of the new technology in a country like Yemen. More so, the findings are important for the Yemeni government if it seriously desires for the country to move forward in its effort in encouraging and promoting the population to be technologically literate and savvy.

This research represents an effort to understand the factors affecting the usage of the information technology from the perspective of Yemen public sector. The findings successfully answered the research objectives 1) whether the extent of technology acceptance model (TAM2) and the unified theory of acceptance and use of technology (UTAUT) explain the intention to use the information technology among the government employees in the Republic of Yemen. 2) The effect of individual differences such as self-efficacy on the acceptance of new technology among employees in the public sector. 3) The effect of system features such as information quality on the acceptance of technology. 4) The effect of social factors such as subjective norm and organization culture on the acceptance of new technology among employees in the public sector. 5) The effect of institutional factors such as top management support and government support on the acceptance of new technology among employees in the public sector.

The approach used is to assess the relationship between these variables and the employee's and manager's intention behavior to use the information technology so that it provides comprehensive understanding for the public sector practitioners for future researcher amongst academicians. Furthermore, the survey questionnaire enhanced the findings by providing detail account of how these factors affecting on the usage for the technology. The findings successfully answered the research objectives as follow:

The capability of technology acceptance model (TAM2) and the unified theory of acceptance and use of technology (UTAUT) to explain the intention to use the information technology among the government employees in the Republic of Yemen. The study has provided empirical evidence for the positive effect of preceived usefulness and preceived ease of use on the intention behaviour to use towards the actual usage for the technology. Empirical evidence has shown that the employees and managers increase their usage for the technology when they preceived the technology is useful and ease to use, that inhance their intention to use or adopt the technology.

The relationship between individual differences such as self-efficacy and the acceptance of technology. The study has provided empirical evidence for the positive effect of self-efficacy on the intention behaviour to use towards the actual usage for the technology throughout the positive effect on preceived usefulness and ease of use. Empirical evidence has shown that the employees and managers have the capability to use the technology.

The relationship between system features such as information quality on the acceptance of technology. The study has provided empirical evidence for the positive effect of information quality on the intention behaviour to use towards the actual usage for the technology throughout the positive effect on preceived usefulness and ease of use. Empirical evidence has shown that information quality could inhance the employee's and manager's intention to use or adopt the technology when they preceived this informatin is usefulness, ease of use and it helps them to achieve the organization goals.

The relationship between social factors such as subjective norm and organization culture on the acceptance of technology among employees in the public sector. The study has provided empirical evidence for the direct positive effect of subjective norm on the intention behaviour to use towards the actual usage for the technology and that encourage the employees and managers to use the technology. In addition, The study has provided empirical evidence for the negative effect of organization culture on the acceptance of technology which could slow the usage or adoption for the technology.

The relationship between institutional factors such as top management support and government support on the acceptance of new technology among employees in the public sector. The study has provided empirical evidence for the positive effect of top management support on the intention behaviour to use towards the actual usage for the technology throughout the positive effect on preceived usefulness and ease of use. Empirical evidence has shown that the organization top management could inhance the employees and managers usage or adoption for the technology when the management provides the necessary equipments and facilities for them to achieve the organization goals. In addition, The study has provided empirical evidence for the positive effect of government support on the intention behaviour to use towards the actual usage for the technology. However, The study could not provide empirical evidence for the effect of government support on the intention behaviour to use towards the actual usage for the technology throughout preceived usefulness and preceived ease of use.

REFERENCES

Abdullah Saeed Bani Ali, Frank T. Anbari, & Money, W. H. (2008). Impact of organizational and project factors on acceptance and usage of project management software and perceived project success. *Project Management Journal, 39*(2), 5-33.

Abdullah Saeed Bani Ali, & Money, W. H. (2005, 03-06 Jan. 2005). *A Study of Project Management System Acceptance.* Paper presented at the the 38th Annual Hawaii International Conference on Hawaii.

Agarwal, R. (2000). Individual acceptance of information technologies. *Framing the domains of IT management: Projecting the future through the past*, 85-104.

Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage. *Mis Quarterly, 24*(4), 665-694.

Ahna, T., Ryub, S., & Hana., I. (2007). The impact of Web quality and playfulness on user acceptance of online retailing. *Information & Management, 44*(3), 263-275.

Aiman-Smith, l., & Green, s. G. (2002). Implementing new manufacturing technology: The related effects of technology characteristics and user learning activities. *Academy of Management Journal, 45*(2), 421-430.

Ajiferuke, I., & Olatokun, W. (2005). Information Technology usage in Nigeria. *Encyclopaedia of Information Science and technology by Pour-Khosrow, Mehdi. London: Idea group reference, 3*, 1508-1512 pp.

Ajjan, H., & Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. *The Internet and Higher Education, 11*(2), 71-80.

Ajzen, I. (2002). Residual effects of past on later behavior: Habituation and reasoned action perspectives. *Personality and Social Psychology Review, 6*(2), 1-107.

Alan Bryman, & Bell, E. (2003). *Business research methods*. United state- new yark: Oxford University Press.

Al-Gahtani, S. (2004). Computer Technology Acceptance Success Factors in Saudi Arabia: An Explorator. *Journal of Global Information Technology Management, 7*(1), 57-69.

Ali, J. M. H. (2004). Information technology in the middle east. *Journal of Global Information Technology Management, 7*(1), 1-4.

Almutairi, H. (2007). Is the 'Technology Acceptance Model' Universally Applicable?: The Case of the kuwaiti ministries. *Journal of Global Information Technology Management, 10*, 57-80

Alsohybe, N. T. (2007). *The implementation of e-government in the Republic of Yemen: An empirical evaluation of the technical and organizational readiness.* Unpublished Dissertation, University Microfilms International, P. O. Box 1764, Ann Arbor, MI, 48106, USA, United States -- Minnesota.

Andrew Burton-Jones, & Hubona, G. S. (2005). Individual Differences and Usage Behavior: Revisiting a Technology Acceptance Model Assumption. *The DATA BASE for Advances in Information Systems, 36*(2), 58-77.

Antonis C. Stylianou, & Jackson, P. J. (2007). A comparative examination of individualdifferences and beliefs on technology usage: Gauging the role of IT. *The Journalof Computer Information Systems, 47*(4), 11-18.

Attaran, M. (2004). Exploring the relationship between information technology and business process reengineering. *Information & Management, 41*(5), 585-596.

Aversano, N. (2005). *Technology rejection of Mobile Telephones* Unpublished Doctor of Management Program, Case Western Reserve Universty United States.

Bassam Hasan, & Ali, J. (2006). The impact of general and system-specific self-efficacy on computer training learning and reactions. *Academy of Information and Management Sciences, 9*(1), 23-38.

Berisha-Namani, M. (2009). *The role of information technology in small and medium sized enterprises in Kosova*. Paper presented at the Fulbright Academy 2009 Conference Small Places Can Change the World Retrieved from: http://www.fulbrightacademy.org/file_depot/0-10000000/2000030000/21647/folder/82430/Berisha+Paper+IT+in+SMEs+in+Kosovo.pdf

Besley, T., & Burgess, R. (2002). The Political Economy of Government Responsiveness: Theory and Evidence from India. [journal]. *the quarterly journal of economica, 117*(4), 1415-1451.

Bhanu S. Ragu-Nathan, Charles H. Apigian, T.S. Ragu-Nathan, & Tu, Q. (2004). A path analytic study of the effect of top management support for information systems performance. *omega, 32*(6), 459-471.

Bhanu S. Ragu-Nathan, C. H. A., T.S. Ragu-Nathan,Qiang Tu. (2004). A path analytic study of the effect of top management support for information systems performance. *Omega, 32*(6), 459-471

Bo Xiao, & Benbasat, I. (2007). E-Commerce product recommendation agents: use, characteristics, and impact *MIS Quarterly, 31*(1), 137-209.

Boo Young Chung, Mirosław J. Skibniewski, Henry C. Lucas Jr., & Kwak, Y. H. (2008). Analyzing enterprise resource planning system implementation success factors in the engineering–construction industry. *Journal of Computing in Civil Engineering, 22*(6), 373–382.

Brien, J. A. O. (2008). *Introduction to Information System*: Irwin McGraw Hill ,, Galgotia Publication.vol4,Pages 160, 269-272.

Brown, I. T. J. (2002). Individual and technology factors affecting perceived ease of use of web-based learning technologies in developing country. *The electronic lournal on information system in developing country, EJISDC (2002), 9*(5), 1-15.

Byrne, B. M. (2010). *structural equation modeling with AMOS* (2 ed. Vol. 16). united state of america: taylor, francis group, 16(2), 1-230.

Byung Gon Kim, Soon Chang Park, & Lee, K. J. (2008). A structural equation modeling of the Internet acceptance in Korea. *Electronic Commerce Research and Applications, 6*(4), 425-432.

Chang, P. V.-C. (2004). *The validity of an extended technology acceptance model (TAM) for predicting internet/portal usage* Unpublished A Master's paper for the M.S. in I.S. degree, the University of North Carolina at Chapel Hill, Carolina.

CHAU, P. Y. K. (2001). Influence of Computer Attitude and Self-Efficacy on IT Usage Behavior. *Journal of End User Computing, 11*(1), 26-28.

Claes Fornell, & Larcker, D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research, 18*(3), 382-388

Cohen, J. (2003). *the unusually useful web book* (1/E ed. Vol. 1). united state of america: new riders.

Dadayan, L., & Ferro, E. (2005). When Technology Meets the Mind: A Comparative Study of the Technology Acceptance Model

Electronic Government. In M. Wimmer, R. Traunmüller, Å. Grönlund & K. Andersen (Eds.), (Vol. 3591, pp. 137-144): Springer Berlin / Heidelberg.

Dale W. Jorgenson, Kevin J. Stiroh, Robert J. Gordon, & Sichel, D. E. (2000). Raising the speed limit: US economic growth in the information age. *Brookings Papers on Economic Activity, 2000*(1 (2000)), 125-235

Daniel M.Cable, & DeRue, D. S. (2002). The convergent and discriminant validity of subjective fit perceptions. . *Journal of Applied Psychology, 87*(5), 875-884.

Daniel Robey, & Marie-claude Boudreau. (1999). Accounting for the contradictory organizational consequences of information technology: Theoretical directions and methodological implications. *Information Systems Research, 10*(2), 167-185.

Darsono, L. I. (2005). examining information technology acceptance. [journal]. *Gadjah Mada International Journal of Business, 7*(2), 155-178.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly, 13*(3), 319-340.

Dinesh Mirchandani, & Motwani, J. (2001). End-user perceptions of ERP systems: a case study of an international automotive supplier. *International Journal of Automotive Technology and Management, 1*(4), 416-424.

Donald R. Cooper, & Schindler, P. S. (2003). *Business Research Methods* (7th ed. Vol. 3). united state: McGraw Hill International Edition.

Dutta, S., & Mia, I. (2006-2007). *The Global Information Technology Report 2006-2007* (Vol. 6th): Palgrave Macmillan 2007

Eric T.G. Wang, & Chen, J. H. F. (2006). Effects of internal support and consultant quality on the consulting process and ERP system quality. *Decision Support Systems, 42*(2), 1029-1041

Erik Brynjolfsson, & Yang, S. (1996). Information technology and productivity: a review of the literature. *Advances in computers, 43*(c), 179-214.

Frazer, K. A., Ballinger, D. G., Cox, D. R., Hinds, D. A., Stuve, L. L., Gibbs, R. A., et al. (2007). A second generation human haplotype map of over 3.1 million SNPs. *Nature, 449*(7164), 851-861.

Fred D. Davis, Richard P. Bagozzi, & Warshaw, P. R. (1989). acceptance of computer technology: a comparison of two theoretical models. *Management science, 35*(8), 982-1003.

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

Goeke, R. J. (2006). *An examination of the effects of experience, expertise, and perceived flexibility on data warehouse use.* Unpublished Dissertations, Kent State University, United States -- Ohio.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *Test, 8*(4), 10.

Grandon, E. E., & Pearson, J. M. (2004). Electronic commerce adoption: An empirical study of small and medium US businesses. *Information & Management, 42*(1), 197-216.

Guido Vonk, Stan Geertman, & Schot, P. (2007). New Technologies Stuck in Old Hierarchies: The Diffusion of Geo-Information Technologies in dutch public organizations. *Public Administration Review, 67*(4), 745-756.

Gupta, B., Dasgupta, S., & Schot, P. (2008). Adoption of ICT in a government organization in a developing country: An empirical study. *The Journal of Strategic Information Systems, 17*(2), 140-154.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *multivariate data analysis,7/E* (7th ed.). upper saddle river, : Prentice Hall , 7th, pp816.

Harry Bouwman, B. v. d. h., Wijngaert, L. v. d., & dijk, J. v. (2002). *information & communication technology in organizations: adoption, implementation, use and effects* (Vol. 1). california: SAGE publications Inc, vol 1, pp 1-219.

Haslina Mohd, Sharifah-Mastura Syed-Mohamad, & Zaini, B. J. (2005). Correlation between information quality, user acceptance and doctor's attitude of EMR System *ICOQSIA 2005, 6-8 December, Penang, Malaysia*, 1-6 http://health-informatics.kk.usm.my/pdf/ICOQSIA.pdf.

Hoepfl, M. C. (1997). Choosing qualitative research: A primer for technology education researchers. *Journal of Technology Education 9*(1).

HORZELLA, Å. (2005). Beyond IT and productivity. [Dissertation]. *Linkoping Studies in Science and Technology, 005/EIS-45*(45).

Hu, P., Chau, P., & Sheng, O. (2002). Adoption of telemedicine technology by health care organizations: An exploratory study. *Journal of Organizational Computing and Electronic Commerce, 12*(3), 179-221.

Hwan-Joo Seo, Young Soo Lee, & Oh, J. H. (2009). Does ICT investment widen the growth gap? *Telecommunications Policy, 33*(8), 422-431

I. Watanabe, & M. Nodu. (2004, 03 September 2004). *A genetic algorithm for optimizing switching sequence of service restoration in distribution systems.* Paper presented at the Evolutionary Computation. CEC2004. , Tokyo, Japan.

Ian Phau, J. S., Gan. (2000). The Effects Of Technological And Individual Characteristics On Flow Experience An Agenda Of Hypotheses. [An Agenda of Hypotheses]. *School of Marketing Curtin University of Technology & Surrey European Business School*, 981–984.

Ian Phau, J. S. G. (2000). *effects of technology and individual characteristics on flow experience.* Paper presented at the Visionary Marketing for the 21st Century: Facing the Challenge.

Icek Ajzen, & Fishbein, M. (2000). Attitudes and the attitude-behavior relation: Reasoned and automatic processes. *European review of social psychology, 11*(1), 1-33.

IInge M.. Klloppiing, & McKiinney, E. (2004). Extending the Technology Acceptance Model and the Task-Technology Fit Model to Consumer E-commerce. *Information Technology, Learning, and Performance Journal, 22*(1), 35-47.

Inge M. Klopping, & Earl McKinney, J. (2006). Practice Makes a Difference:Experience and E-Commerce. *Information Technology, Learning, and Performance Journal, 24*(1), 25-37.

Irene Mia, & Dutta, S. (2007-2008). *The Global Information Technology Report 2007-2008: Fostering Innovation Through Networked Readiness*. France Palgrave Macmillan.

Jen-Her Wu, Wen-Shen Shen, Li-Min Lin, Robert A. Greenes, & Bates, D. W. (2008). Testing the technology acceptance model for evaluating healthcare professionals' intention to use an adverse event reporting system. *International Journal for Quality in Health Care*, *20*(2), 123-129.

Juergen Biener, Andrea M. Hodge, Joel R. Hayes, Cynthia A. Volkert, Luis A. Zepeda-Ruiz, Alex V. Hamza, et al. (2006). Size effects on the mechanical behavior of nanoporous Au. *Nano Lett*, *6*(10), 2379-2382.

Kamel Rouibah, Hosny I. Hamdy, & Majed Z. Al-Enezi. (2009). Effect of management support, training, and user involvement on system usage and satisfaction in Kuwait. *Industrial Management & Data Systems*, *109*(3), 338-356.

Khawaja A. Saeed, & Abdinnour-Helm, S. (2008). Examining the effects of information system characteristics and perceived usefulness on post adoption usage of information systems. *Information & Management*, *45*(6), 376-386.

Kiraz, E., & Ozdemir, D. (2006). The Relationship between Educational Ideologies and Technology Acceptance in Pre-service Teachers. *Educational Technology & Society*, *9*(2), 152-165 retrived from http://citeseerx.ist.psu.edu/viewdoc/download?doi=110.151.151.109.6185&rep=rep6181&type=pdf.

Kwan, R., & Wang, F. L. (2009). *Hybrid Learning(ICHL2009)*. Paper presented at the 2nd International Conference on Hybrid Learning. Retrieved from http://www.cs.cityu.edu.hk/~ichl2009/ICHL2009_Local.pdf.

Kwasi Amoako-Gyampah, & Salam, A. F. (2004). An extension of the technology acceptance model in an ERP implementation environment. *Information & Management, 41*(6), 731-745.

Ledyard R Tucker, & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika 38*(1), 1-10.

Lester (Les) A. Singletary, Asli Yagmur Akbulut, & Houston, A. L. (2002). *Innovative software use after mandatory adoption* Paper presented at the Eighth Americas Conference on Information Systems, united state of America.

Lisa Seymour, Wadzanai Makanya, & Berrangé, S. (2007, April 11-13, 2007). *End-Users' Acceptance of Enterprise Resource Planning Systems: An Investigation of Antecedents.* Paper presented at the the 6th Annual ISOnEworld Conference, Las Vegas, NV April 11-13, 2007.

Louise K. Schaper, & Pervan, G. P. (2004). A model of information and communication technology acceptance and utilisation by occupational therapists. [Information Technology in Health Care: Sociotechnical Approaches]. *International Journal of Medical Informatics, 76*(Supplement 1), S212-S221.

Lucy Dadayan, & Ferro, E. (2005). *When technology meets the mind: A comparative study of the technology acceptance model*. Retrieved from http://www.springerlink.com/content/arkj2m8pu7mrvvr7/.

Lynda Aiman-Smith, & Green, S. G. (2002). Implementing New Manufacturing Technology: The Related Effects of Technology Characteristics and User Learning Activities. [journal]. *The Academy of Management Journal, 25*(2), 421-430

M. Lynne Markus, C. T., Paul C. van Fenema (2000). Enterprise resource planning: multisite ERP implementations. [Magazine]. *Communications of the ACM 43*(4).

Marieke de Mooij, & Hofstede, G. (2002). Convergence and divergence in consumer behavior: implications for international retailing. *Journal of Retailing*, *78*(1), 61-69
Martin Fishbein, & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. london, england: Addison-Wesley Pub (Sd) (June 1975)
Martin Neil Baily, Robert J. Gordon, William D. Nordhaus, & Romer, D. (1988). The productivity slowdown, measurement issues, and the explosion of computer power. [journal]. *Brookings Papers on Economic Activity, 1988*(2), 347-431.
Matthew S. Eastin, & LaRose, R. (2000). Internet Self Efficacy and the Psychology of the Digital Divide. *Journal of Computer Mediated Communication, 6*(1), http://jcmc.indiana.edu/vol6/issue1/eastin.html.
Merchant, S. (2007). *Exploring the Influence of Cultural Values on the Acceptance of Information Technology: An Application of the Technology Acceptance Model* (Vol. 4). santa rosa, california 95409 USA: information science press.
Mike W. Chiasson, & Lovato, C. Y. (2001). Factors influencing the formation of a user's perceptions and use of a DSS software innovation. *The DATA BASE for Advances in Information Systems, 32*(3), 16 - 35.
Gong M. , Xu Y., Yu Y. (2004). An Enhanced Technology Acceptance Model for Web-Based Learning. *Journal of Information Systems Education*, *15*(4), 1-365.
Ministry of civil, i. (2008). *The Number of Employees according to the government unites*.
Mohamad Noorman Masrek, N. S. A. K., & Hussein, R. (2007). Investigating corporate intranet effectiveness: a conceptual framework. *Information Management & Computer Security, 15*(3), 168 - 183.
Yi M. Y., Hwang Y. (2003). Predicting the use of web-based information systems: self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model. *International Journal of Human-Computer Studies, 59*(4), 431-449.
Rackoff N. , Wiseman C. , & Ullrich, W. A. (1985). Information Systems for Competitive Advantage: Implementation of a Planning Process. *MIS Quarterly, 9*, 10.
Norman Au, W. T. Eric Ngai, & T. C. Edwin Cheng. (2008). Extending the understanding of end user Information systems satisfaction Formation: An Equitable Needs fulfillment Model Approach. *MIS Quarterly, 32*(1), 43-66.
Nov, O., & Ye, C. (2008). *Personality and technology acceptance: Personal innovativeness in IT, openness and resistance to change*. Paper presented at the the 41st Hawaii International Conference on System Sciences. Retrieved from http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=4439153
Olatz Lopez-Fernandez, & Rodriguez-Illera, J. L. (2008). Investigating university students' adaptation to a digital learner course portfolio. *Computers & Education, 52*(3), 608-616.
Raaij, E. M. v., & Schepers, J. J. L. (2008). The acceptance and use of a virtual learning environment in China. *Computers & Education*, *50*(3), 838-852.
Rajiv Kishore, & McLean, E. R. (2001). *Thw role of personal innovativeness and self-efficacy in Information technology acceptance: an extension of TAM with notions of risk* Paper presented at the Twenty-Second International Conference on Information Systems, New york.

Ramazan Yalcinkaya, B. A., M.S. (2007). *Police officers' adoprion of information technology: a case study of the turkish POLNET system.* Unpublished Dissertation, Univesity of North Texas, North Texas.

Randall E. Schumacker, & Lomax, R. G. (2004). *a brginner's guide to structural equation modeling* (Vol. 2nd): Lawrence Erlbaum Associates, Inc, 2nd, 1-499.

Raúl Medina Moraa, T. W., Rodrigo Floresa, Fernando Floresa. (1993). The action workflow approach to workflow management technology. [journal]. *The Information Society 9*(4), 391-404.

Raykov, T. (2001). Estimation of congeneric scale reliability using covariance structure analysis with nonlinear constraints. *British Journal of Mathematical and Statistical Psychology, 54*(2), 315–323.

Ritu Agarwal, j. p. (1999). are individual differences germane to the acceptance of new information technology? *Decision sciences, 30*(2), 361-390.

Roland Traunmuller, K. L. (2002). *electronic government.* Paper presented at the First International Conference, EGOV 2002, Aix-en-Provence, France, September 2-5, 2002., Berlin.

Schepers, J., & Wetzels, M. (2007). A meta-analysis of the technology acceptance model: Investigating subjective norm and moderation effects. *Information & Management, 44*(1), 90-103.

Schrodt, P. (2002). The relationship between organizational identification andorganizational culture: Employee perceptions of culture and identification in a retailsales organization'. *Communication Studies, 53*(3), 189-202.

Sekaran, U. (2006). *reseach methods for business, a skill-building approch* (4 ed. Vol. 4). new Delhi, fourth edition,4th,pp450: john wiley & sons, Inc.

Sharp, J. H. (2006). Development, Extension, and Application: A Review of the Technology Acceptance Model. *information system education journal, 5*(9), 1-10.

Shih, Y.-Y., & Huang, S.-S. (2009). The actual usage of erp systems: An extended technology acceptance perspective. *Journal of Research and Practice in Information Technology, 41*(3), 263-276.

Simmons, B. A. (2000). international law and state behavior: commitment and compliance in international menyary affairs. [journal]. *The American Political Science Review, 94*(4), 819-835.

Sircar, S., Turnbow, J. L., & ., B. B. (2000). A framework for assessing the relationship between information technology investments and firm performance. [Journal]. *Journal of Management Information Systems, 16*(4), 69-97.

Sliuzas, R. (1999). *information requirements planning management functions processes supported extensive data collection analysis capacity* Paper presented at the ESF/N-Aerus Annual workshop, Leuven-Brussels, 23-26 May, 2001. Retrieved from http://www.naerus.net/venezia/ or http://www.n-aerus.net/web/sat/workshops/2001/papers/sliuzas.pdf.

Smith, D. P. (2008). *Models of Successful Adoption and Implementation for IT Projects in the Public Sector.* Unpublished Dissertation, Walden University, United States.

srinivasan, A. (1985). alternativemeasures of system effectiveness: associations and implications. *mis quarterly, 9*(3), 243-253.

Staples, D. S., Wong, I., & Seddon, P. B. (2002). Having expectations of information systems benefits that match received benefits: does it really matter? *Information & Management, 40*(2), 115-131.

Starr, S. H. (2005). *The Challenges Associated with Achieving Interoperability in Support of Net-Centric Operations*. Paper presented at the the 10thCommand and Control Research and TechnologySymposium. Retrieved from http://handle.dtic.mil/100.2/ADA463978

SungPark, Marita A.O'Brien, Kelly E.Caine, Wendy A.Rogers, Arthur D.Fisk, KoertsVan Ittersum, et al. (2006, 2006-01-01). *Acceptance of Computer Technology: Understanding the User and the Organizational Characteristics.* Paper presented at the Human Factors and Ergonomics Society Annual Meeting Proceedings, Macroergonomics

Suzanne Rivard, Louis Raymond, & Verreault, D. (2006). Resource-based view and competitive strategy: An integrated model of the contribution of information technology to firm performance. *Journal of strategic information systems, 15*(1), 29-50.

Tae Goo Kim, J. H. L., Rob Law. (2007). An empirical examination of the acceptance behaviour of hotel front office systems: An extended technology acceptance model. *Tourism Management, 29*(2), 500-513.

Tang, S.-M. (2000). An impact factor model of Intranet adoption: an exploratory and empirical research. *The Journal of Systems & Software, 51*(3), 157-173.

Taracan, E., Varol, E. S., & Toker, B. (2010). A Study on the acceptance of information technologies from the perspectives of the acadimicians in turkey. *Ege Academic Review, 10*(3), 791-812.

Teo, T. (2009). Modelling technology acceptance in education: A study of pre-service teachers. *Computers & Education, 52*(2), 302-312.

Tero Pikkarainen, Kari Pikkarainen, Heikki Karjaluoto, & Pahnila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet Research Emerald Group Publishing Limited, 14*(3), 224-235.

Thomas Patrick Hayes. (2006). *AN examination of the factors that influence an auditor's decision to use AID in their assessment of management fraud* Unpublished Dissertation Prepared for the Degree of Doctor of Philosophy University of North Texas, Denton, Texas.

Tony Ahn, Seewon Ryu, & Han, I. (2007). The impact of Web quality and playfulness on user acceptance of online retailing. *Information & Management*, *44*(3), 263-275

Vathanophas, V., Nattapon Krittayaphongphun, & Chalalai Klomsiri. (2008). Technology acceptance toward e-government initiative in Royal Thai Navy. *Transforming Government: People, Process and Policy, 2*(4), 256-282.

Visawanath Venkatesh, & Speier, C. (2000). Creating an effective training environment for enhancing telework. *International Journal of Human-Computer Studies, 52*(6), 991-1006.

Viswanath Venkatesh, Michael G. Morris, Gordon B. Davis, & Davis, F. D. (2003). User acceptance of information technology toward a unified view *MIS Quarterly, 27*(3), 425-478.

VJswanath Venkatesh, & Morris, M. G. (2000). Why don't men ever stop ask for directions? gender,social influence, and their role in technology acceptance and usage behavior *MIS Quarterly, 24*(1), 115-139.

W.H. Loo, P. H. P. Y., S.C. Chong. (2009). User acceptance of Malaysian government multipurpose smartcard applications. *Government Information Quarterly, 26(2009)*(2), 358–367.

Watson, R. T. (2007). *Global text* (Vol. 2). USA: The worldwide community of IS academics.

William G. Chismar, & Wiley-Patton, S. (2003). *Does the Extended Technology Acceptance Model Apply to Physicians.* Paper presented at the IEEE, Hawaii.

William G. Chismar, & Wiley-Patton, S. (2003, 2003). *Does the Extended Technology Acceptance Model Apply to Physicians, hicss.* Paper presented at the 36th Annual Hawaii International Conference on System Sciences (HICSS'03), vol 6, pp 1-160, Big Island, Hawaii

William Lewis, Ritu Agarwal, & V.Sambamurthy. (2003). Sources of influence on beliefs about information technology use: An empirical study of knowledge workers *MIS Quarterly, 27*(4), 657-678.

Xin Li, Traci J. Hess, Anna L. McNab, & Yu, Y. (2009). Culture and acceptance of global web sites: a cross-country study of the effects of national cultural values on acceptance of a personal web portal. *ACM SIGMIS Database, 40*(4), 49-74.

Yang, H.-d., & Yoo, Y. (2004). It's all about attitude: revisiting the technology acceptance model. *Decision Support Systems, 38*(1), 19-31.

YANG, H.-H. (2007). *The effect of technology acceptance on undergraduate students' usage of WEBCT as a collabrative tool* Unpublished A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor in Philosophy, the University of Central Florida Orlando, Florida, Florida.

Ya-Yueh Shih, & Fang, K. (2006). Effects of network quality attributes on customer adoption intentions of Internet Banking. *Total Quality Management & Business Excellence 17*(1), 61-77.

Yeniyurt, S., & Townsend, J. D. (2003). Does culture explain acceptance of new products in a country?: An empirical investigation. *International Marketing Review, 20*(4), 377 - 396.

Yi, M. Y., & Hwang, Y. (2003). Predicting the use of web-based information systems: self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model. *International Journal of Human-Computer Studies, 59*(4), 431-449.

Yoon, C. (2009). The effects of national culture values on consumer acceptance of e-commerce: Online shoppers in China. *Information & Management, 46*(5), 294-301.

Zakour, A. B. (2004). *Cultural differences and information technology acceptance.* Paper presented at the Annual Conference of the Southern Association for Information Systems, united state.

Zakour, A. B. (2008). *Cultural differences and Information technology acceptance* Paper presented at the the 7th Annual Conference of the Southern Association for Information Systems.

\(http://www.smallbusinessbible.org/advan_disadvan_informationtechnology.html # 3/4/2009).

https://www.cia.gov/library/publications/the-world-factbook/geos/ym.html or (CIA - The Central Intelligence Agency, *2005*)

APPENDIX A1

Pilot study

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	76	76.0	76.0	76.0
	female	24	24.0	24.0	100.0
	Total	100	100.0	100.0	

work experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	from 0 - 2 years	12	12.0	12.0	12.0
	from 3 -6 years	41	41.0	41.0	53.0
	from 7 - 10 years	18	18.0	18.0	71.0
	from 11 - 12 years	8	8.0	8.0	79.0
	more than 15 years	21	21.0	21.0	100.0
	Total	100	100.0	100.0	

Education level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	high school	29	29.0	29.0	29.0
	community college	10	10.0	10.0	39.0
	university degree	56	56.0	56.0	95.0
	master degree	5	5.0	5.0	100.0
	Total	100	100.0	100.0	

Organization size

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	large	66	66.0	66.0	66.0
	medium	30	30.0	30.0	96.0
	small	4	4.0	4.0	100.0
	Total	100	100.0	100.0	

Reliability

[DataSet1] C:\Users\RND\Desktop\pilot.sav

Scale: ALL VARIABLES

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.959	.955	102

Reliability for each variable

Intention to use

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.705	.734	4

Usefulness

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.949	.950	8

Ease of use

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.695	.715	9

Self-efficacy

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.748	.757	11

Information quality

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.908	.907	7

Subjective norms

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.764	.766	2

Organization Culture

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.959	.959	35

Top management support

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.944	.945	7

Government support

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.959	.960	7

Table 3.1

The Distribution of Questionnaires in Various Government Departments in Sana'a

STATE CODE	GOV	AGENCYID	AGENCY	SECTOR	MALE	FMALE	CNT
1	Secretariat of the capital	901	Under the distribution - the Secretariat of the capital	The civil ministry	516	327	843
1	Secretariat of the capital	10032	Secretariat of the capital	The civil ministry	662	68	730
1	Secretariat of the capital	10056	Ministry of Planning and International Cooperation (Secretariat)	The civil ministry	9	5	14
1	Secretariat of the capital	10092	Ministry of Civil Service and Insurance (Secretariat)	The civil ministry	160	33	193
1	Secretariat of the capital	10115	Ministry of Finance (Secretariat)	The civil ministry	463	30	493
1	Secretariat of the capital	10134	Customs Department (Secretariat)	The civil ministry	116	2	118
1	Secretariat of the capital	10148	Tax Department (Secretariat)	The civil ministry	690	26	716

1	Secretariat of the capital	10209	Ministry of Education (Secretariat)	The civil ministry	8157	9514	17671
1	Secretariat of the capital	10263	Ministry of Public Health and Population (Secretariat)	The civil ministry	1315	732	2047
1	Secretariat of the capital	10267	Hospital seventy	The civil ministry	321	288	609
1	Secretariat of the capital	10298	Republican Hospital Education / Sanaa	The civil ministry	630	259	889
1	Secretariat of the capital	10300	Ministry of Labour and Social Affairs (Secretariat)	The civil ministry	180	130	310
1	Secretariat of the capital	10322	General Authority for Insurance and Pensions (Secretariat)	The civil ministry	61	18	79
1	Secretariat of the capital	10361	General Authority for the care of the families of the martyrs (Secretariat)	The civil ministry	2	0	2

1	Secretariat of the capital	10366	Foundation of the Republic of the press, printing and publishing (Secretariat)	The civil ministry	17	5	22
1	Secretariat of the capital	10374	Ministry of Youth and Sports (Secretariat)	The civil ministry	32	5	37
1	Secretariat of the capital	10395	Ministry of Culture (Secretariat)	The civil ministry	62	34	96
1	Secretariat of the capital	10414	- Ministry of Tourism and the Environment (Secretariat) - formerly	The civil ministry	36	11	47
1	Secretariat of the capital	10448	Information Ministry (Secretariat)	The civil ministry	31	4	35
1	Secretariat of the capital	10467	Ministry of Public Works and Highways (Secretariat)	The civil ministry	1071	28	1099
1	Secretariat of the capital	10487	Land and Real Estate Department of State (Secretariat)	The civil ministry	17	0	17

1	Secretariat of the capital	10541	Ministry of Industry and Trade (Secretariat)	The civil ministry	104	5	109
1	Secretariat of the capital	10660	Cooperative Agricultural Credit Bank (Secretariat)	The civil ministry	5	0	5
1	Secretariat of the capital	10711	Public Institution for Telecommunication (Secretariat)	The civil ministry	481	18	499
1	Secretariat of the capital	10732	General Establishment for Water and Sanitation (Secretariat)	The civil ministry	85	3	88
1	Secretariat of the capital	10749	Public Electricity Corporation Secretariat	The civil ministry	2125	35	2160
1	Secretariat of the capital	10766	General Organization for Land Transport Secretariat	The civil ministry	237	5	242
1	Secretariat of the capital	10823	General Organization for slaughterhouses and meat markets	The civil ministry	558	11	569

			(Secretariat(				
1	Secretariat of the capital	10830	Yemen Petroleum Company (Secretariat)	The civil ministry	414	9	423
1	Secretariat of the capital	11077	Yemen Bank for Reconstruction and Development (Secretariat)	The civil ministry	377	152	529
1	Secretariat of the capital	11100	Ministry of Technical Education and Vocational Education (Secretariat)	The civil ministry	533	84	617
1	Secretariat of the capital	11152	Yemen Economic Corporation (Secretariat)	The civil ministry	82	12	94
1	Secretariat of the capital	11156	General Authority for Post and Postal Savings (Secretariat)	The civil ministry	224	25	249
1	Secretariat of the capital	11171	Tobacco and sulfur (Secretariat)	The civil ministry	63	6	69
1	Secretariat	11187	National Bank	The civil	20	7	27

	of the capital		of Yemen (Secretariat)	ministry			
1	Secretariat of the capital	11189	Central Organization for Control and Accounting (Secretariat)	The civil ministry	38	2	40
1	Secretariat of the capital	11450	Social Welfare Fund (Secretariat)	The civil ministry	59	37	96
1	Secretariat of the capital	11456	General Organization for Social Insurance (Secretariat)	The civil ministry	95	10	105
1	Secretariat of the capital	11544	General Establishment for Electricity / Power Plant Dhahban 1	The civil ministry	166	0	166
1	Secretariat of the capital	11545	General Establishment for Electricity / Power Plant Dhahban 2	The civil ministry	61	1	62
1	Secretariat of the capital	11548	Public Electricity Corporation / operational unit to projects	The civil ministry	158	0	158

1	Secretariat of the capital	11827	Central Bureau of Statistics (Secretariat)	The civil ministry	14	4	18
1	Secretariat of the capital	11837	Ministry of Transport and Maritime Affairs (Secretariat)	The civil ministry	13	3	16
1	Secretariat of the capital	11895	Ministry of Agriculture and Irrigation (Secretariat)	The civil ministry	25	4	29
1	Secretariat of the capital	11920	Local water and sanitation (Secretariat)	The civil ministry	906	45	951
1	Secretariat of the capital	11932	Heritage Fund and the Cultural Development (Secretariat)	The civil ministry	43	2	45
1	Secretariat of the capital	11947	National Center for the treatment of tumors (Secretariat)	The civil ministry	2	0	2
1	Secretariat of the capital	11964	The Literacy and Adult Education (Secretariat)	The civil ministry	13	54	67
1	Secretariat of the capital	11980	Fund vocational and technical training and skills	The civil ministry	1	1	2

			development (Secretariat)				
1	Secretariat of the capital	11986	Ministry of Local Administration (Secretariat)	The civil ministry	2	0	2
1	Secretariat of the capital	12009	Clean-up project (Secretariat)	The civil ministry	347	78	425
1	Secretariat of the capital	12062	Supreme Committee for Elections and Referendum (Secretariat of the capital)	The civil ministry	9	0	9
1	Secretariat of the capital	12077	General Book (Library) (Secretariat of the capital)	The civil ministry	28	14	42
1	Secretariat of the capital	12126	Ministry of Tourism (Secretariat)	The civil ministry	2	1	3
1	Secretariat of the capital	12195	Duties of the General Administration of Zakat (Secretariat)	The civil ministry	194	13	207
1	Secretariat of the capital	22270	General Authority for Land and	The civil ministry	22	0	22

			Survey and Urban Planning (Secretariat)				
1	Secretariat of the capital	22280	Public Electricity Corporation (GAM) / Plant grating	The civil ministry	47	0	47
57	0	640143	0	0	22101	12160	34261

APPENDIX A2

Measurement model

Analysis Summary

Date and Time

Date: Thursday, September 15, 2011

Time: 4:38:43 PM

Title: Measurement model - technology acceptance: Thursday, September 15, 2011 4:38 PM

Notes for Group

The model is recursive.

Sample size = 357

Variable Summary

Your model contains the following variables

Observed, endogenous variables
effic3
iqua5
iqua6
SN1
SN2
cult5
cult13
cult16
cult22
TOP3
TOP5
GOV1
GOV4
GOV5
effic2
bi1
bi2
bi3

useful6
useful7
useful8
ease6
ease7
ease8
bi4
effic1
Unobserved, exogenous variables
efficacy
e15
quality
e17
e18
Norms
e20
e21
Culture
e23
e25
e27
e29
Managment
e35
e37
Government
e40
e43
e44
e13
intention
e1
e2
e3
usefulness
e6
e7
e8
ease
e10
e11
e12
e47
e48

Variable counts :

Number of variables in your model:	61
Number of observed variables:	26
Number of unobserved variables:	35
Number of exogenous variables:	35
Number of endogenous variables:	26

Parameter summary

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	35	0	0	0	0	35
Labeled	0	0	0	0	0	0
Unlabeled	17	36	35	0	0	88
Total	52	36	35	0	0	123

Assessment of normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
effic1	1	4	0.355	2.741	0.229	0.882
bi4	1	3	-0.083	-0.641	-0.547	-2.108
ease8	1	4	0.063	0.482	-0.472	-1.819
ease7	1	3	0.052	0.4	-0.719	-2.772
ease6	1	4	-0.055	-0.424	-0.635	-2.449
useful8	1	3	-0.019	-0.148	-1.235	-4.764
useful7	1	3	0.118	0.912	-0.635	-2.451
useful6	1	2	-0.243	-1.872	-1.941	-7.487
bi3	1	3	0.203	1.566	-0.777	-2.997
bi2	1	3	0.018	0.139	-0.887	-3.42
bi1	1	3	0.153	1.18	-0.82	-3.164
effic2	1	4	0.287	2.213	-0.188	-0.725
GOV5	1	5	0.104	0.804	-0.597	-2.301
GOV4	1	5	0.179	1.384	-0.62	-2.393
GOV1	1	5	0.09	0.693	-0.769	-2.968
TOP5	1	4	0.007	0.058	-0.664	-2.561
TOP3	1	4	0.1	0.77	-0.474	-1.827
cult22	1	5	-0.099	-0.767	-0.802	-3.094
cult16	1	5	-0.25	-1.928	-0.347	-1.339
cult13	1	5	-0.123	-0.948	-0.569	-2.193
cult5	1	5	-0.174	-1.345	-0.506	-1.952
SN2	1	4	0.006	0.047	-0.367	-1.415
SN1	1	4	0.176	1.36	-0.744	-2.87
iqua6	1	3	-0.019	-0.15	-0.553	-2.135
iqua5	1	3	-0.051	-0.394	-0.894	-3.449
effic3	1	4	0.336	2.59	0.487	1.88
Multivariate					41.915	10.378

Notes for Model

Computation of degrees of freedom

Number of distinct sample moments:	351
Number of distinct parameters to be estimated:	88
Degrees of freedom (351 - 88):	263

Result :

Minimum was achieved

Chi-square = 340.338

Degrees of freedom = 263

Probability level = .001

Estimates

Scalar Estimates

Maximum Likelihood Estimates

Regression Weights:

			Estimate	S.E.	C.R.	P	Label
effic3	<---	efficacy	0.546	0.062	8.78	***	par_1
iqua5	<---	quality	1				
iqua6	<---	quality	0.893	0.062	14.479	***	par_2
SN1	<---	Norms	1.363	0.136	10.039	***	par_3
SN2	<---	Norms	1				
cult5	<---	Culture	1.008	0.069	14.657	***	par_4
cult13	<---	Culture	1.435	0.088	16.26	***	par_5
cult16	<---	Culture	1				
cult22	<---	Culture	0.925	0.067	13.75	***	par_6
TOP3	<---	Managment	0.933	0.055	17.071	***	par_7
TOP5	<---	Managment	1				
GOV1	<---	Government	1.023	0.043	23.833	***	par_8
GOV4	<---	Government	1.054	0.039	27.039	***	par_9
GOV5	<---	Government	1				
effic2	<---	efficacy	1				

bi1	<---	intention	1				
bi2	<---	intention	1.016	0.091	11.217	***	par_25
bi3	<---	intention	1.038	0.094	11.061	***	par_26
useful6	<---	usefulness	1				
useful7	<---	usefulness	1.229	0.063	19.451	***	par_27
useful8	<---	usefulness	1.138	0.058	19.502	***	par_28
ease6	<---	ease	1				
ease7	<---	ease	1.151	0.079	14.589	***	par_29
ease8	<---	ease	1.11	0.079	14.11	***	par_30
bi4	<---	intention	0.986	0.091	10.834	***	par_52
effic1	<---	efficacy	0.783	0.074	10.579	***	par_53

Standardized Regression Weights

			Estimate
effic3	<---	efficacy	0.548
iqua5	<---	quality	0.89
iqua6	<---	quality	0.856
SN1	<---	Norms	0.862
SN2	<---	Norms	0.837
cult5	<---	Culture	0.763
cult13	<---	Culture	0.86
cult16	<---	Culture	0.784
cult22	<---	Culture	0.719
TOP3	<---	Managment	0.869
TOP5	<---	Managment	0.875
GOV1	<---	Government	0.871
GOV4	<---	Government	0.925
GOV5	<---	Government	0.904
effic2	<---	efficacy	0.843
bi1	<---	intention	0.692
bi2	<---	intention	0.69
bi3	<---	intention	0.729
useful6	<---	usefulness	0.822
useful7	<---	usefulness	0.882
useful8	<---	usefulness	0.885
ease6	<---	ease	0.734
ease7	<---	ease	0.873
ease8	<---	ease	0.801
bi4	<---	intention	0.726
effic1	<---	efficacy	0.73

Covariances:

			Estimate	S.E.	C.R.	P	Label
efficacy	<-->	quality	0.082	0.026	3.102	0.002	par_10
efficacy	<-->	Norms	0.046	0.024	1.947	0.052	par_11
efficacy	<-->	Culture	0.041	0.027	1.502	0.133	par_12
efficacy	<-->	Managment	0.049	0.031	1.572	0.116	par_13
efficacy	<-->	Government	-0.035	0.033	-1.064	0.287	par_14
quality	<-->	Norms	0.135	0.024	5.749	***	par_15
quality	<-->	Culture	0.112	0.026	4.357	***	par_16
quality	<-->	Managment	0.095	0.029	3.251	0.001	par_17
quality	<-->	Government	0.149	0.032	4.681	***	par_18
Norms	<-->	Culture	0.085	0.026	3.298	***	par_19
Norms	<-->	Managment	0.041	0.028	1.486	0.137	par_20
Norms	<-->	Government	0.148	0.032	4.617	***	par_21
Culture	<-->	Managment	0.291	0.037	7.805	***	par_22
Culture	<-->	Government	0.257	0.037	6.946	***	par_23
Managment	<-->	Government	0.393	0.045	8.769	***	par_24
intention	<-->	usefulness	0.073	0.013	5.42	***	par_31
intention	<-->	ease	0.106	0.018	5.853	***	par_32
efficacy	<-->	intention	0.107	0.022	4.898	***	par_33
quality	<-->	intention	0.118	0.021	5.671	***	par_34
Norms	<-->	intention	0.096	0.02	4.781	***	par_35
Culture	<-->	intention	0.087	0.021	4.106	***	par_36
Managment	<-->	intention	0.1	0.024	4.11	***	par_37
Government	<-->	intention	0.097	0.025	3.828	***	par_38
usefulness	<-->	ease	0.108	0.015	7.108	***	par_39
efficacy	<-->	usefulness	0.049	0.017	2.913	0.004	par_40
quality	<-->	usefulness	0.124	0.017	7.17	***	par_41
Norms	<-->	usefulness	0.055	0.015	3.727	***	par_42
Culture	<-->	usefulness	0.01	0.016	0.628	0.53	par_43
Managment	<-->	usefulness	0.048	0.019	2.579	0.01	par_44
Government	<-->	usefulness	0.001	0.02	0.032	0.975	par_45
efficacy	<-->	ease	0.104	0.022	4.66	***	par_46
quality	<-->	ease	0.124	0.022	5.729	***	par_47
Norms	<-->	ease	0.036	0.018	1.951	0.051	par_48
Culture	<-->	ease	0.028	0.02	1.376	0.169	par_49
Managment	<-->	ease	0.054	0.024	2.31	0.021	par_50
Government	<-->	ease	0.018	0.025	0.708	0.479	par_51

Correlations

			Estimate
efficacy	<-->	quality	0.206
efficacy	<-->	Norms	0.127
efficacy	<-->	Culture	0.098
efficacy	<-->	Managment	0.101
efficacy	<-->	Government	-0.066
quality	<-->	Norms	0.389
quality	<-->	Culture	0.279
quality	<-->	Managment	0.205
quality	<-->	Government	0.291
Norms	<-->	Culture	0.229
Norms	<-->	Managment	0.097
Norms	<-->	Government	0.312
Culture	<-->	Managment	0.593
Culture	<-->	Government	0.471
Managment	<-->	Government	0.626
intention	<-->	usefulness	0.383
intention	<-->	ease	0.453
efficacy	<-->	intention	0.355
quality	<-->	intention	0.413
Norms	<-->	intention	0.362
Culture	<-->	intention	0.286
Managment	<-->	intention	0.284
Government	<-->	intention	0.249
usefulness	<-->	ease	0.528
efficacy	<-->	usefulness	0.186
quality	<-->	usefulness	0.497
Norms	<-->	usefulness	0.236
Culture	<-->	usefulness	0.038
Managment	<-->	usefulness	0.158
Government	<-->	usefulness	0.002
efficacy	<-->	ease	0.323
quality	<-->	ease	0.403
Norms	<-->	ease	0.126
Culture	<-->	ease	0.085
Managment	<-->	ease	0.144
Government	<-->	ease	0.042

Variances:

	Estimate	S.E.	C.R.	P	Label
efficacy	0.415	0.054	7.759	***	par_54
quality	0.376	0.041	9.184	***	par_55
Norms	0.322	0.044	7.332	***	par_56
Culture	0.427	0.051	8.374	***	par_57
Managment	0.565	0.059	9.533	***	par_58
Government	0.696	0.064	10.841	***	par_59
intention	0.218	0.033	6.706	***	par_60
usefulness	0.167	0.018	9.181	***	par_61
ease	0.252	0.033	7.565	***	par_62
e15	0.288	0.025	11.761	***	par_63
e17	0.099	0.023	4.356	***	par_64
e18	0.109	0.019	5.754	***	par_65
e20	0.206	0.056	3.666	***	par_66
e21	0.138	0.031	4.472	***	par_67
e23	0.311	0.029	10.766	***	par_68
e25	0.308	0.039	7.904	***	par_69
e27	0.268	0.026	10.171	***	par_70
e29	0.342	0.03	11.374	***	par_71
e35	0.16	0.025	6.465	***	par_72
e37	0.174	0.028	6.184	***	par_73
e40	0.231	0.023	10.158	***	par_74
e43	0.131	0.018	7.419	***	par_75
e44	0.156	0.018	8.734	***	par_76
e13	0.169	0.036	4.758	***	par_77
e1	0.237	0.023	10.361	***	par_78
e2	0.248	0.024	10.494	***	par_79
e3	0.208	0.021	9.841	***	par_80
e6	0.08	0.008	10.342	***	par_81
e7	0.071	0.009	7.974	***	par_82
e8	0.06	0.008	7.874	***	par_83
e10	0.215	0.02	10.716	***	par_84
e11	0.104	0.016	6.507	***	par_85
e12	0.173	0.019	9.332	***	par_86
e47	0.19	0.019	9.897	***	par_87
e48	0.223	0.026	8.482	***	par_88

Squared Multiple Correlations:

	Estimate
effic1	0.533
bi4	0.527
ease8	0.642
ease7	0.762
ease6	0.539
useful8	0.783
useful7	0.779
useful6	0.676
bi3	0.531
bi2	0.475
bi1	0.479
effic2	0.71
GOV5	0.817
GOV4	0.855
GOV1	0.759
TOP5	0.765
TOP3	0.755
cult22	0.516
cult16	0.615
cult13	0.74
cult5	0.582
SN2	0.7
SN1	0.744
iqua6	0.733
iqua5	0.791
effic3	0.3

Implied Correlations

	effic1	bi4	ease8	ease7	ease6	useful8	useful7	useful6	bi3
effic1	1								
bi4	0.188	1							
ease8	0.189	0.263	1						
ease7	0.206	0.287	0.699	1					
ease6	0.173	0.241	0.588	0.641	1				
useful8	0.12	0.246	0.374	0.408	0.343	1			
useful7	0.12	0.245	0.373	0.407	0.342	0.781	1		
useful6	0.112	0.228	0.348	0.379	0.319	0.727	0.725	1	
bi3	0.189	0.529	0.264	0.288	0.242	0.247	0.246	0.229	1
bi2	0.179	0.5	0.25	0.273	0.229	0.233	0.233	0.217	0.502
bi1	0.179	0.502	0.251	0.273	0.23	0.234	0.234	0.218	0.504
effic2	0.615	0.217	0.218	0.238	0.2	0.139	0.138	0.129	0.218
GOV5	-0.043	0.163	0.03	0.033	0.028	0.001	0.001	0.001	0.164
GOV4	-0.044	0.167	0.031	0.034	0.029	0.001	0.001	0.001	0.168
GOV1	-0.042	0.157	0.029	0.032	0.027	0.001	0.001	0.001	0.158
TOP5	0.064	0.18	0.101	0.11	0.093	0.122	0.122	0.113	0.181
TOP3	0.064	0.179	0.101	0.109	0.092	0.121	0.121	0.113	0.179
cult22	0.051	0.149	0.049	0.053	0.045	0.024	0.024	0.022	0.15
cult16	0.056	0.163	0.053	0.058	0.049	0.026	0.026	0.024	0.163
cult13	0.061	0.178	0.058	0.064	0.054	0.029	0.029	0.027	0.179
cult5	0.054	0.158	0.052	0.056	0.048	0.025	0.025	0.024	0.159
SN2	0.078	0.22	0.084	0.092	0.077	0.175	0.174	0.163	0.221
SN1	0.08	0.227	0.087	0.095	0.08	0.18	0.18	0.168	0.228
iqua6	0.129	0.256	0.277	0.301	0.254	0.376	0.375	0.35	0.257
iqua5	0.134	0.267	0.288	0.313	0.264	0.391	0.39	0.363	0.268
effic3	0.4	0.141	0.142	0.155	0.13	0.09	0.09	0.084	0.142

Continue, Implied Correlations

	bi2	bi1	effic2	GOV5	GOV4	GOV1	TOP5	TOP3
effic1								
bi4								
ease8								
ease7								
ease6								
useful 8								
useful 7								
useful 6								
bi3								
bi2	1							
bi1	0.477	1						
effic2	0.206	0.207	1					
GOV5	0.155	0.156	-0.05	1				
GOV4	0.159	0.159	-0.051	0.836	1			
GOV1	0.15	0.15	-0.048	0.788	0.806	1		
TOP5	0.171	0.172	0.074	0.495	0.507	0.477	1	
TOP3	0.17	0.17	0.074	0.492	0.503	0.474	0.76	1
cult22	0.142	0.142	0.059	0.306	0.313	0.295	0.373	0.37
cult16	0.154	0.155	0.065	0.334	0.341	0.322	0.407	0.404
cult13	0.169	0.17	0.071	0.366	0.375	0.353	0.446	0.443
cult5	0.15	0.151	0.063	0.325	0.332	0.313	0.396	0.393
SN2	0.209	0.21	0.09	0.236	0.242	0.228	0.071	0.07
SN1	0.215	0.216	0.092	0.244	0.249	0.235	0.073	0.072
iqua6	0.244	0.244	0.149	0.225	0.23	0.217	0.154	0.153
iqua5	0.253	0.254	0.155	0.234	0.239	0.225	0.16	0.159
effic3	0.134	0.135	0.462	-0.032	-0.033	-0.031	0.048	0.048

Continue , Implied Correlations

	cult22	cult16	cult13	cult5	SN2	SN1	iqua6	iqua5	effic3
effic1									
bi4									
ease8									
ease7									
ease6									
useful8									
useful7									
useful6									
bi3									
bi2									
bi1									
effic2									
GOV5									
GOV4									
GOV1									
TOP5									
TOP3									
cult22	1								
cult16	0.563	1							
cult13	0.618	0.674	1						
cult5	0.548	0.598	0.657	1					
SN2	0.138	0.15	0.165	0.147	1				
SN1	0.142	0.155	0.17	0.151	0.721	1			
iqua6	0.172	0.187	0.206	0.182	0.279	0.287	1		
iqua5	0.178	0.195	0.214	0.189	0.29	0.299	0.761	1	
effic3	0.039	0.042	0.046	0.041	0.058	0.06	0.097	0.101	1

Standardized Residual Covariances

	effic1	bi4	ease8	ease7	ease6	useful8	useful7	useful6	bi3
effic1	0								
bi4	0.068	0							
ease8	-0.058	-0.227	0						
ease7	-0.526	-0.155	0.093	0					
ease6	-0.469	0.754	-0.014	-0.125	0				
useful8	-0.255	-0.752	-0.543	0.217	0.292	0			
useful7	-0.774	0.791	-0.53	0.009	1.227	-0.042	0		
useful6	-0.401	-0.044	-1.013	0.018	0.559	0.027	0.041	0	
bi3	0.105	0.696	0.6	-0.355	0.689	0.401	0.79	0.093	0
bi2	-1.066	0.278	-0.879	-0.729	-0.751	-0.732	-0.932	-0.703	-0.711
bi1	-0.422	-1.037	0.919	0.494	0.285	0.347	0.415	-0.213	-0.332
effic2	0.074	0.523	-0.309	0.274	0.372	-0.153	0.034	-0.246	0.176
GOV5	0.515	-1.197	-0.234	-0.074	0.372	0.58	-0.898	0.163	0.186
GOV4	-0.83	-0.906	-0.033	0.62	0.495	0.215	-0.437	0.771	-0.172
GOV1	-0.922	0.394	-0.94	-0.611	-0.4	-0.328	-0.232	0.57	-0.144
TOP5	-0.521	-0.366	-0.612	0.208	0.059	0.114	-0.673	-0.052	0.552
TOP3	-0.339	-0.788	-0.438	0.388	0.062	0.466	-0.442	0.921	0.403
cult22	0.212	0.371	-0.654	-0.875	-0.901	-1.214	-1.318	-0.446	-1.784
cult16	0.271	0.619	-0.987	-0.646	-0.065	0.207	0.759	0.435	0.606
cult13	-1.503	-0.543	-0.428	0.634	0.813	-0.578	-0.401	-0.413	-1.299
cult5	-0.487	0.791	-0.317	1.301	0.811	0.966	1.562	1.019	0.302
SN2	0.786	0.404	-0.029	0.424	0.635	-0.38	-0.655	0.348	0.596
SN1	1.259	-0.697	-0.464	-0.529	0.569	0.136	0.01	0.836	-0.508
iqua6	-1.454	-0.239	-0.88	-0.251	-0.177	0.035	0.123	-0.482	0.154
iqua5	-0.042	-0.11	0.471	0.079	0.651	0.31	-0.007	-0.318	0.622
effic3	-0.153	0.35	0.186	0.422	0.17	1.333	1.588	1.057	2.014

Continue, Standardized Residual Covariances

	bi2	bi1	effic2	GOV5	GOV4	GOV1	TOP5	TOP3	cult22
effic1									
bi4									
ease8									
ease7									
ease6									
useful8									
useful7									
useful6									
bi3									
bi2	0								
bi1	1.164	0							
effic2	-0.135	-0.619	0						
GOV5	0.049	0.475	0.154	0					
GOV4	0.366	0.066	0.429	0.032	0				
GOV1	1.003	1.044	0.73	-0.101	0.034	0			
TOP5	-0.553	1.469	0.132	0.075	-0.217	-0.013	0		
TOP3	-1.068	0.293	-0.073	0.232	0.079	-0.148	0	0	
cult22	-0.293	-0.013	1.428	-0.74	0.167	0.647	0.153	0.011	0
cult16	0.468	1.55	1.162	0.365	0.419	0.571	0.857	-0.086	0.131
cult13	-1.442	0.118	-0.238	-0.159	0.27	0.438	-0.08	-0.382	0.167
cult5	0.314	2.479	0.574	-0.974	-0.608	-0.839	0.247	-0.45	-0.422
SN2	-0.424	0.606	-0.568	0.867	0.182	0.478	0.876	0.397	0.109
SN1	-0.339	0.62	0.017	-0.111	-0.953	0.193	-0.152	-0.931	-1.5
iqua6	-0.132	-0.436	-0.336	-0.071	-0.269	0.069	-0.253	-0.282	-0.242
iqua5	-0.502	0.391	0.307	0.095	-0.185	0.574	0.205	0.195	-1.494
effic3	0.013	-0.434	-0.078	-0.54	-0.804	-0.794	1.08	0.391	-0.778

Continue, Standardized Residual Covariances

	cult16	cult13	cult5	SN2	SN1	iqua6	iqua5	effic3
effic1								
bi4								
ease8								
ease7								
ease6								
useful8								
useful7								
useful6								
bi3								
bi2								
bi1								
effic2								
GOV5								
GOV4								
GOV1								
TOP5								
TOP3								
cult22								
cult16	0							
cult13	-0.223	0						
cult5	-0.034	0.255	0					
SN2	1.154	0.422	1.408	0				
SN1	0.556	-0.899	-0.704	0	0			
iqua6	0.726	0.516	0.63	0.032	0.654	0		
iqua5	0.062	-0.477	0.374	-0.662	0.037	0	0	
effic3	0.056	-1.712	-0.509	-1.039	-1.274	0.31	1.833	0

Total Effects

	ease	Useful-ness	Inten-tion	Govern-ment	Manage-ment	Culture	Norms	quality	efficacy
effic1	0	0	0	0	0	0	0	0	0.783
bi4	0	0	0.986	0	0	0	0	0	0
ease8	1.11	0	0	0	0	0	0	0	0
ease7	1.151	0	0	0	0	0	0	0	0
ease6	1	0	0	0	0	0	0	0	0
useful8	0	1.138	0	0	0	0	0	0	0
useful7	0	1.229	0	0	0	0	0	0	0
useful6	0	1	0	0	0	0	0	0	0
bi3	0	0	1.038	0	0	0	0	0	0
bi2	0	0	1.016	0	0	0	0	0	0
bi1	0	0	1	0	0	0	0	0	0
effic2	0	0	0	0	0	0	0	0	1
GOV5	0	0	0	1	0	0	0	0	0
GOV4	0	0	0	1.054	0	0	0	0	0
GOV1	0	0	0	1.023	0	0	0	0	0
TOP5	0	0	0	0	1	0	0	0	0
TOP3	0	0	0	0	0.933	0	0	0	0
cult22	0	0	0	0	0	0.925	0	0	0
cult16	0	0	0	0	0	1	0	0	0
cult13	0	0	0	0	0	1.435	0	0	0
cult5	0	0	0	0	0	1.008	0	0	0
SN2	0	0	0	0	0	0	1	0	0
SN1	0	0	0	0	0	0	1.363	0	0
iqua6	0	0	0	0	0	0	0	0.893	0
iqua5	0	0	0	0	0	0	0	1	0
effic3	0	0	0	0	0	0	0	0	0.546

Standardized Total Effects

	ease	Useful-ness	intention	Govern-ment	Manage-ment	Culture	Norms	quality	efficacy
effic1	0	0	0	0	0	0	0	0	0.73
bi4	0	0	0.726	0	0	0	0	0	0
ease8	0.801	0	0	0	0	0	0	0	0
ease7	0.873	0	0	0	0	0	0	0	0
ease6	0.734	0	0	0	0	0	0	0	0
useful8	0	0.885	0	0	0	0	0	0	0
useful7	0	0.882	0	0	0	0	0	0	0
useful6	0	0.822	0	0	0	0	0	0	0
bi3	0	0	0.729	0	0	0	0	0	0
bi2	0	0	0.69	0	0	0	0	0	0
bi1	0	0	0.692	0	0	0	0	0	0
effic2	0	0	0	0	0	0	0	0	0.843
GOV5	0	0	0	0.904	0	0	0	0	0
GOV4	0	0	0	0.925	0	0	0	0	0
GOV1	0	0	0	0.871	0	0	0	0	0
TOP5	0	0	0	0	0.875	0	0	0	0
TOP3	0	0	0	0	0.869	0	0	0	0
cult22	0	0	0	0	0	0.719	0	0	0
cult16	0	0	0	0	0	0.784	0	0	0
cult13	0	0	0	0	0	0.86	0	0	0
cult5	0	0	0	0	0	0.763	0	0	0
SN2	0	0	0	0	0	0	0.837	0	0
SN1	0	0	0	0	0	0	0.862	0	0
iqua6	0	0	0	0	0	0	0	0.856	0
iqua5	0	0	0	0	0	0	0	0.89	0
effic3	0	0	0	0	0	0	0	0	0.548

Direct Effects

	ease	Useful-ness	intention	Govern-ment	Manage-ment	Culture	Norms	quality	efficacy
effic1	0	0	0	0	0	0	0	0	0.783
bi4	0	0	0.986	0	0	0	0	0	0
ease8	1.11	0	0	0	0	0	0	0	0
ease7	1.151	0	0	0	0	0	0	0	0
ease6	1	0	0	0	0	0	0	0	0
useful8	0	1.138	0	0	0	0	0	0	0
useful7	0	1.229	0	0	0	0	0	0	0
useful6	0	1	0	0	0	0	0	0	0
bi3	0	0	1.038	0	0	0	0	0	0
bi2	0	0	1.016	0	0	0	0	0	0
bi1	0	0	1	0	0	0	0	0	0
effic2	0	0	0	0	0	0	0	0	1
GOV5	0	0	0	1	0	0	0	0	0
GOV4	0	0	0	1.054	0	0	0	0	0
GOV1	0	0	0	1.023	0	0	0	0	0
TOP5	0	0	0	0	1	0	0	0	0
TOP3	0	0	0	0	0.933	0	0	0	0
cult22	0	0	0	0	0	0.925	0	0	0
cult16	0	0	0	0	0	1	0	0	0
cult13	0	0	0	0	0	1.435	0	0	0
cult5	0	0	0	0	0	1.008	0	0	0
SN2	0	0	0	0	0	0	1	0	0
SN1	0	0	0	0	0	0	1.363	0	0
iqua6	0	0	0	0	0	0	0	0.893	0
iqua5	0	0	0	0	0	0	0	1	0
effic3	0	0	0	0	0	0	0	0	0.546

Standardized Direct Effects

	ease	Usefulness	intention	Government	Management	Culture	Norms	quality	efficacy
effic1	0	0	0	0	0	0	0	0	0.73
bi4	0	0	0.726	0	0	0	0	0	0
ease8	0.801	0	0	0	0	0	0	0	0
ease7	0.873	0	0	0	0	0	0	0	0
ease6	0.734	0	0	0	0	0	0	0	0
useful8	0	0.885	0	0	0	0	0	0	0
useful7	0	0.882	0	0	0	0	0	0	0
useful6	0	0.822	0	0	0	0	0	0	0
bi3	0	0	0.729	0	0	0	0	0	0
bi2	0	0	0.69	0	0	0	0	0	0
bi1	0	0	0.692	0	0	0	0	0	0
effic2	0	0	0	0	0	0	0	0	0.843
GOV5	0	0	0	0.904	0	0	0	0	0
GOV4	0	0	0	0.925	0	0	0	0	0
GOV1	0	0	0	0.871	0	0	0	0	0
TOP5	0	0	0	0	0.875	0	0	0	0
TOP3	0	0	0	0	0.869	0	0	0	0
cult22	0	0	0	0	0	0.719	0	0	0
cult16	0	0	0	0	0	0.784	0	0	0
cult13	0	0	0	0	0	0.86	0	0	0
cult5	0	0	0	0	0	0.763	0	0	0
SN2	0	0	0	0	0	0	0.837	0	0
SN1	0	0	0	0	0	0	0.862	0	0
iqua6	0	0	0	0	0	0	0	0.856	0
iqua5	0	0	0	0	0	0	0	0.89	0
effic3	0	0	0	0	0	0	0	0	0.548

Modification Indices

Covariances:

			M.I.	Par Change
e48	<-->	Norms	7.201	0.042
e8	<-->	e47	7.22	-0.021
e7	<-->	e47	6.612	0.022
e7	<-->	e10	5.021	0.019
e3	<-->	e47	4.087	0.026
e1	<-->	e47	7.737	-0.037
e1	<-->	e2	8.338	0.044
e44	<-->	e48	12.58	0.047
e44	<-->	e47	4.196	-0.025
e44	<-->	e8	10.232	0.024
e44	<-->	e7	5.842	-0.02
e44	<-->	e13	5.957	-0.034
e40	<-->	ease	5.965	-0.031
e40	<-->	intention	4.134	0.025
e40	<-->	e48	4.917	-0.034
e40	<-->	e47	5.757	0.033
e40	<-->	e8	7.048	-0.023
e40	<-->	e13	4.225	0.033
e29	<-->	e3	5.814	-0.041
e29	<-->	e44	4.756	-0.034
e27	<-->	ease	6.567	-0.035
e25	<-->	ease	6.987	0.043
e25	<-->	intention	5.641	-0.037
e23	<-->	e1	6.076	0.042
e21	<-->	e23	4.376	0.031
e17	<-->	e12	4.469	0.023
e15	<-->	e3	7.828	0.042
e15	<-->	e17	5.508	0.03

Variances:

			M.I.	Par Change

Regression Weights:

			M.I.	Par Change
useful7	<---	bi4	4.58	0.058
useful7	<---	GOV5	4.782	-0.041
bi3	<---	cult22	5.023	-0.072
bi3	<---	effic3	7.019	0.111
bi1	<---	cult5	7.11	0.087
effic2	<---	cult22	4.995	0.08
GOV5	<---	effic1	6.061	0.089
GOV5	<---	cult22	4.124	-0.06
GOV1	<---	bi4	5.592	0.107
cult22	<---	useful7	4.423	-0.123
cult22	<---	bi3	4.579	-0.107
cult13	<---	intention	5.519	-0.2
cult13	<---	efficacy	5.704	-0.149
cult13	<---	effic1	5.384	-0.121
cult13	<---	bi2	6.25	-0.131
cult13	<---	effic3	5.461	-0.131
cult5	<---	usefulness	5.249	0.19
cult5	<---	intention	4.032	0.153
cult5	<---	useful7	6.524	0.145
cult5	<---	bi1	8.348	0.138
SN2	<---	Culture	4.143	0.081
SN2	<---	cult5	7.266	0.077
SN1	<---	cult22	4.718	-0.083
SN1	<---	cult5	6.384	-0.094
iqua6	<---	effic1	4.71	-0.067
iqua5	<---	effic3	6.883	0.093
effic3	<---	bi3	4.957	0.099

Minimization History

Iteration		Negative	Condition #	Smallest	Diameter	F	NTries	Ratio
		eigenvalues		eigenvalue				
0	e	35		-0.519	9999	5460.6	0	9999
1	e*	16		-0.354	3.834	2165.11	20	0.544
2	e*	4		-0.14	1.053	1253.91	5	0.763
3	e	0	925.39		1	555.078	5	0.855
4	e	0	230.386		1.176	440.502	2	0
5	e	0	142.593		0.504	354.836	1	1.134
6	e	0	132.438		0.22	342.076	1	1.164
7	e	0	127.074		0.085	340.409	1	1.119
8	e	0	130.258		0.022	340.338	1	1.033
9	e	0	129.901		0.001	340.338	1	1.002
10	e	0	129.9		0	340.338	1	1

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	88	340.338	263	0.001	1.294
Saturated model	351	0	0		
Independence model	26	5232.44	325	0	16.1

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.019	0.932	0.909	0.698
Saturated model	0	1		
Independence model	0.166	0.346	0.294	0.321

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0.935	0.92	0.984	0.981	0.984
Saturated model	1		1		1
Independence model	0	0	0	0	0

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	0.809	0.757	0.796
Saturated model	0	0	0
Independence model	1	0	0

NCP

Model	NCP	LO 90	HI 90
Default model	77.338	33.823	128.976
Saturated model	0	0	0
Independence model	4907.44	4676.42	5144.88

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	0.956	0.217	0.095	0.362
Saturated model	0	0	0	0
Independence model	14.698	13.785	13.136	14.452

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.029	0.019	0.037	1
Independence model	0.206	0.201	0.211	0

AIC

Model	AIC	BCC	BIC	CAIC
Default model	516.338	530.782	857.579	945.579
Saturated model	702	759.611	2063.09	2414.09
Independence model	5284.44	5288.71	5385.26	5411.26

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.45	1.328	1.595	1.491
Saturated model	1.972	1.972	1.972	2.134
Independence model	14.844	14.195	15.511	14.856

HOELTER

Model	HOELTER 0.05	HOELTER 0.01
Default model	316	334
Independence model	26	27

Execution time summary

Minimization:	0.03
Miscellaneous:	2.051
Bootstrap:	0
Total:	2.081

APPENDIX B 1

Structural model

Analysis Summary

Date and Time

Date: Thursday, September 15, 2011

Time: 4:46:24 PM

Title

Structural model, technology acceptance a: Thursday, September 15, 2011 4:46 PM

No**tes for Group**

The model is recursive.

Sample size = 357

Variable Summary

The Model contains the following variables

Observed, endogenous variables
SN1
SN2
bi2
useful6
useful7
ease7
ease8
bi3
useful8
bi4
ease6
Unobserved, endogenous variables
intention
usefulness
Unobserved, exogenous variables
Norms
e20
e21
e2

e6
e7
ease
e11
e12
e3
e8
e4
e10
resd2
resd1

Variable counts

Number of variables in your model:	28
Number of observed variables:	11
Number of unobserved variables:	17
Number of exogenous variables:	15
Number of endogenous variables:	13

Parameter summary

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	17	0	0	0	0	17
Labeled	0	0	0	0	0	0
Unlabeled	11	0	15	0	0	26
Total	28	0	15	0	0	43

Assessment of normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
ease6	1	4	-0.055	-0.424	-0.635	-2.449
bi4	1	3	-0.083	-0.641	-0.547	-2.108
useful8	1	3	-0.019	-0.148	-1.235	-4.764
bi3	1	3	0.203	1.566	-0.777	-2.997
ease8	1	4	0.063	0.482	-0.472	-1.819
ease7	1	3	0.052	0.4	-0.719	-2.772
useful7	1	3	0.118	0.912	-0.635	-2.451
useful6	1	2	-0.243	-1.872	-1.941	-7.487
bi2	1	3	0.018	0.139	-0.887	-3.42
SN2	1	4	-0.05	-0.382	-0.19	-0.734
SN1	1	4	0.219	1.687	-0.669	-2.582
Multivariate					13.006	7.265

Sample Moments:

Sample Covariance

	ease6	bi4	Useful8	bi3	ease8	ease7	Useful7	Useful6	bi2	SN2	SN1
ease6	0.467										
bi4	0.122	0.402									
useful8	0.129	0.068	0.275								
bi3	0.127	0.241	0.094	0.442							
ease8	0.279	0.111	0.125	0.137	0.483						
ease7	0.286	0.117	0.146	0.118	0.324	0.438					
useful7	0.159	0.104	0.232	0.109	0.136	0.153	0.323				
useful6	0.119	0.071	0.19	0.077	0.1	0.125	0.205	0.246			
bi2	0.089	0.225	0.07	0.211	0.097	0.106	0.071	0.061	0.473		
SN2	0.057	0.096	0.045	0.091	0.057	0.063	0.041	0.045	0.089	0.422	
SN1	0.049	0.081	0.034	0.088	0.023	0.03	0.031	0.049	0.091	0.413	0.566

Condition number = 27.256

Eigenvalues: 1.653 .882 .592 .446 .251 .204 .175 .127 .078 .068 .061

Determinant of sample covariance matrix = .000

Sample Correlations

	ease6	bi4	Useful8	bi3	ease8	ease7	Useful7	Useful6	bi2	SN2	SN1
ease6	1										
bi4	0.282	1									
useful8	0.359	0.205	1								
bi3	0.28	0.57	0.269	1							
ease8	0.588	0.251	0.344	0.297	1						
ease7	0.633	0.278	0.42	0.268	0.705	1					
useful7	0.411	0.288	0.778	0.289	0.343	0.407	1				
useful6	0.35	0.226	0.729	0.234	0.291	0.38	0.728	1			
bi2	0.188	0.517	0.194	0.46	0.202	0.232	0.182	0.179	1		
SN2	0.129	0.232	0.131	0.21	0.126	0.147	0.11	0.14	0.199	1	
SN1	0.096	0.169	0.085	0.176	0.043	0.061	0.073	0.132	0.176	0.844	1

Condition number = 28.592

Eigenvalues: 4.159 1.884 1.404 1.227 .551 .455 .403 .289 .277 .206 .145

Notes for Model

(Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments:	66
Number of distinct parameters to be estimated:	26
Degrees of freedom (66 - 26):	40

Result

Minimum was achieved
Chi-square = 54.896
Degrees of freedom = 40
Probability level = .059

Estimates

Scalar Estimates

Maximum Likelihood Estimates

Regression Weights:

			Estimate	S.E.	C.R.	P	Label
usefulness	<---	ease	0.375	0.042	8.925	***	par_8
intention	<---	Norms	0.158	0.046	3.481	***	par_9
intention	<---	usefulness	0.197	0.078	2.53	0.011	par_10
intention	<---	ease	0.229	0.059	3.895	***	par_11
SN1	<---	Norms	1.006	0.154	6.533	***	par_1
SN2	<---	Norms	1				
bi2	<---	intention	1				
useful6	<---	usefulness	1				
useful7	<---	usefulness	1.231	0.064	19.357	***	par_2
ease7	<---	ease	1				
ease8	<---	ease	0.964	0.06	16.179	***	par_3
bi3	<---	intention	1.097	0.109	10.022	***	par_4
useful8	<---	usefulness	1.13	0.058	19.385	***	par_5
bi4	<---	intention	1.127	0.108	10.423	***	par_6
ease6	<---	ease	0.872	0.06	14.454	***	par_7

Standardized Regression Weights:

			Estimate
usefulness	<---	ease	0.528
intention	<---	Norms	0.233
intention	<---	usefulness	0.185
intention	<---	ease	0.304
SN1	<---	Norms	0.857
SN2	<---	Norms	0.985
bi2	<---	intention	0.637
useful6	<---	usefulness	0.824
useful7	<---	usefulness	0.886
ease7	<---	ease	0.872
ease8	<---	ease	0.8
bi3	<---	intention	0.724
useful8	<---	usefulness	0.88
bi4	<---	intention	0.782
ease6	<---	ease	0.736

Variances:

	Estimate	S.E.	C.R.	P	Label
Norms	0.41	0.069	5.944	***	par_12
ease	0.333	0.035	9.519	***	par_13
resd2	0.12	0.014	8.665	***	par_14
resd1	0.144	0.025	5.771	***	par_15
e20	0.151	0.063	2.389	0.017	par_16
e21	0.012	0.061	0.199	0.843	par_17
e2	0.278	0.026	10.719	***	par_18
e6	0.079	0.008	10.182	***	par_19
e7	0.07	0.009	7.611	***	par_20
e11	0.105	0.016	6.385	***	par_21
e12	0.174	0.019	9.278	***	par_22
e3	0.207	0.024	8.742	***	par_23
e8	0.062	0.008	7.914	***	par_24
e4	0.153	0.022	7.095	***	par_25
e10	0.214	0.02	10.58	***	par_26

Squared Multiple Correlations:

	Estimate
usefulness	0.279
intention	0.24
ease6	0.542
bi4	0.611
useful8	0.775
bi3	0.524
ease8	0.641
ease7	0.76
useful7	0.784
useful6	0.679
bi2	0.406
SN2	0.971
SN1	0.734

Matrices

Implied (for all variables) Correlations

	ease	Norms	Usefulness	Intention	ease6	bi4	Useful8	bi3
ease	1							
Norms	0	1						
Usefulness	0.528	0	1					
Intention	0.402	0.233	0.346	1				
ease6	0.736	0	0.389	0.296	1			
bi4	0.314	0.182	0.27	0.782	0.231	1		
useful8	0.465	0	0.88	0.304	0.342	0.238	1	
bi3	0.291	0.169	0.25	0.724	0.214	0.566	0.22	1
ease8	0.8	0	0.423	0.322	0.589	0.251	0.372	0.233
ease7	0.872	0	0.461	0.35	0.642	0.274	0.406	0.254
useful7	0.468	0	0.886	0.306	0.345	0.239	0.78	0.222
useful6	0.435	0	0.824	0.285	0.32	0.223	0.725	0.206
bi2	0.256	0.148	0.22	0.637	0.188	0.498	0.194	0.461
SN2	0	0.985	0	0.229	0	0.179	0	0.166
SN1	0	0.857	0	0.199	0	0.156	0	0.144

	Ease8	Ease7	Useful7	Useful6	bi2	SN2	SN1
ease							
Norms							
Usefulness							
Intention							
ease6							
bi4							
useful8							
bi3							
ease8	1						
ease7	0.698	1					
useful7	0.375	0.408	1				
useful6	0.348	0.38	0.729	1			
bi2	0.205	0.223	0.195	0.181	1		
SN2	0	0	0	0	0.146	1	
SN1	0	0	0	0	0.127	0.844	1

Implied Correlations

	ease6	bi4	Useful8	bi3	ease8	ease7	Useful7	Useful6	bi2	SN2	SN1
ease6	1										
bi4	0.231	1									
useful8	0.342	0.238	1								
bi3	0.214	0.566	0.22	1							
ease8	0.589	0.251	0.372	0.233	1						
ease7	0.642	0.274	0.406	0.254	0.698	1					
useful7	0.345	0.239	0.78	0.222	0.375	0.408	1				
useful6	0.32	0.223	0.725	0.206	0.348	0.38	0.729	1			
bi2	0.188	0.498	0.194	0.461	0.205	0.223	0.195	0.181	1		
SN2	0	0.179	0	0.166	0	0	0	0	0.146	1	
SN1	0	0.156	0	0.144	0	0	0	0	0.127	0.844	1

Residual Covariance

	ease6	bi4	Useful8	bi3	ease8	ease7	Useful7	Useful6	bi2	SN2	SN1
ease6	0										
bi4	0.023	0.008									
useful8	0.006	-0.01	0								
bi3	0.031	0.006	0.017	0.007							
ease8	-0.001	0.001	-0.01	0.031	0						
ease7	-0.004	0.003	0.005	0.007	0.003	0					
useful7	0.026	0.018	0	0.026	-0.012	0	0				
useful6	0.01	0.002	0.001	0.01	-0.02	0	0	0			
bi2	0.001	0.012	0	0.003	-0.001	0.005	-0.005	-0.001	0.006		
SN2	0.057	0.022	0.045	0.019	0.057	0.063	0.041	0.045	0.024	0	
SN1	0.049	0.007	0.034	0.017	0.023	0.03	0.031	0.049	0.026	0	0

Standardized Residual Covariance

	ease6	bi4	Useful8	bi3	ease8	ease7	Useful7	Useful6	bi2	SN2	SN1
ease6	0										
bi4	0.993	0.257									
useful8	0.304	-0.574	0								
bi3	1.255	0.241	0.929	0.221							
ease8	-0.028	0.036	-0.507	1.23	0						
ease7	-0.144	0.129	0.253	0.309	0.113	0					
useful7	1.184	0.948	-0.024	1.287	-0.55	-0.016	0				
useful6	0.529	0.101	0.062	0.555	-1.022	0.006	-0.02	0			
bi2	0.022	0.457	0.018	0.096	-0.026	0.198	-0.218	-0.028	0.171		
SN2	2.436	1.016	2.475	0.844	2.385	2.775	2.085	2.638	1.002	0	
SN1	1.805	0.274	1.608	0.624	0.818	1.143	1.383	2.494	0.93	0	0

Total Effects

	ease	Norms	usefulness	intention
usefulness	0.375	0	0	0
intention	0.303	0.158	0.197	0
ease6	0.872	0	0	0
bi4	0.342	0.179	0.222	1.127
useful8	0.423	0	1.13	0
bi3	0.333	0.174	0.216	1.097
ease8	0.964	0	0	0
ease7	1	0	0	0
useful7	0.461	0	1.231	0
useful6	0.375	0	1	0
bi2	0.303	0.158	0.197	1
SN2	0	1	0	0
SN1	0	1.006	0	0

Standardized Total Effects

	ease	Norms	usefulness	intention
usefulness	0.528	0	0	0
intention	0.402	0.233	0.185	0
ease6	0.736	0	0	0
bi4	0.314	0.182	0.145	0.782
useful8	0.465	0	0.88	0
bi3	0.291	0.169	0.134	0.724
ease8	0.8	0	0	0
ease7	0.872	0	0	0
useful7	0.468	0	0.886	0
useful6	0.435	0	0.824	0
bi2	0.256	0.148	0.118	0.637
SN2	0	0.985	0	0
SN1	0	0.857	0	0

Direct Effects

	ease	Norms	usefulness	intention
usefulness	0.375	0	0	0
intention	0.229	0.158	0.197	0
ease6	0.872	0	0	0
bi4	0	0	0	1.127
useful8	0	0	1.13	0
bi3	0	0	0	1.097
ease8	0.964	0	0	0
ease7	1	0	0	0
useful7	0	0	1.231	0
useful6	0	0	1	0
bi2	0	0	0	1
SN2	0	1	0	0
SN1	0	1.006	0	0

Standardized Direct Effects

	ease	Norms	usefulness	intention
usefulness	0.528	0	0	0
intention	0.304	0.233	0.185	0
ease6	0.736	0	0	0
bi4	0	0	0	0.782
useful8	0	0	0.88	0
bi3	0	0	0	0.724
ease8	0.8	0	0	0
ease7	0.872	0	0	0
useful7	0	0	0.886	0
useful6	0	0	0.824	0
bi2	0	0	0	0.637
SN2	0	0.985	0	0
SN1	0	0.857	0	0

Indirect Effects

	ease	Norms	usefulness	intention
usefulness	0	0	0	0
intention	0.074	0	0	0
ease6	0	0	0	0
bi4	0.342	0.179	0.222	0
useful8	0.423	0	0	0
bi3	0.333	0.174	0.216	0
ease8	0	0	0	0
ease7	0	0	0	0
useful7	0.461	0	0	0
useful6	0.375	0	0	0
bi2	0.303	0.158	0.197	0
SN2	0	0	0	0
SN1	0	0	0	0

Standardized Indirect Effects

	ease	Norms	usefulness	intention
usefulness	0	0	0	0
intention	0.098	0	0	0
ease6	0	0	0	0
bi4	0.314	0.182	0.145	0
useful8	0.465	0	0	0
bi3	0.291	0.169	0.134	0
ease8	0	0	0	0
ease7	0	0	0	0
useful7	0.468	0	0	0
useful6	0.435	0	0	0
bi2	0.256	0.148	0.118	0
SN2	0	0	0	0
SN1	0	0	0	0

Modification Indices

Covariances:

			M.I.	Par Change
Norms	<-->	ease	8.557	0.062
e8	<-->	e4	7.659	-0.021
e7	<-->	e10	4.765	0.019
e7	<-->	e4	5.724	0.02
e21	<-->	ease	11.047	0.038
e20	<-->	ease	4.163	-0.027

Variances:

			M.I.	Par Change

Regression Weights:

			M.I.	Par Change
useful7	<---	bi4	4.405	0.058
SN2	<---	ease	11.047	0.114
SN2	<---	useful8	4.504	0.074
SN2	<---	ease8	9.74	0.082
SN2	<---	ease7	11.51	0.094
SN1	<---	ease	4.163	-0.081
SN1	<---	ease8	4.975	-0.069
SN1	<---	ease7	4.989	-0.072

Minimization History

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	8		-0.418	9999	2128.42	0	9999
1	e*	3		-0.275	2.438	845.33	20	0.575
2	e*	1		-0.089	0.975	328.952	5	0.775
3	e	0	230.755		0.22	200.052	6	0.968
4	e	0	102.106		0.911	154.774	3	0
5	e	0	16142.8		0.484	70.47	1	1.077
6	e	0	78.868		0.368	60.042	1	0.864
7	e	1		-0.01	0.094	55.915	1	0.961
8	e	0	179.665		0.182	55.166	12	0.601
9	e	0	287.049		0.058	54.919	1	1.112
10	e	0	277.677		0.039	54.897	1	1.022
11	e	0	287.209		0.001	54.896	1	1.001
12	e	0	293.345		0	54.896	1	1

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	26	54.896	40	0.059	1.372
Saturated model	66	0	0		
Independence model	11	2037.29	55	0	37.042

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.022	0.973	0.955	0.59
Saturated model	0	1		
Independence model	0.131	0.436	0.323	0.363

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0.973	0.963	0.993	0.99	0.992
Saturated model	1		1		1
Independence model	0	0	0	0	0

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	0.727	0.708	0.722
Saturated model	0	0	0
Independence model	1	0	0

NCP

Model	NCP	LO 90	HI 90
Default model	14.896	0	38.446
Saturated model	0	0	0
Independence model	1982.29	1838.44	2133.5

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	0.154	0.042	0	0.108
Saturated model	0	0	0	0
Independence model	5.723	5.568	5.164	5.993

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.032	0	0.052	0.928
Independence model	0.318	0.306	0.33	0

AIC

Model	AIC	BCC	BIC	CAIC
Default model	106.896	108.71	207.717	233.717
Saturated model	132	136.605	387.931	453.931
Independence model	2059.29	2060.06	2101.95	2112.95

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.3	0.258	0.366	0.305
Saturated model	0.371	0.371	0.371	0.384
Independence model	5.785	5.38	6.209	5.787

HOELTER

Model	HOELTER 0.05	HOELTER 0.01
Default model	362	414
Independence model	13	15

Execution time summary

Minimization:	0.028
Miscellaneous:	0.56
Bootstrap:	0
Total:	0.588

APPENDIX B 2

Structural model after modification

Analysis Summary

Date and Time

Date: Thursday, September 15, 2011

Time: 4:52:55 PM

Title

Structural model, technology acceptance b: Thursday, September 15, 2011 4:52 PM

Notes for Group

The model is recursive.

Sample size = 357

Variable Summary

Your model contains the following variables

Observed, endogenous variables
SN1
SN2
bi2
useful7
ease8
bi3
useful8
bi4
ease6
Unobserved, endogenous variables
intention
usefulness
Unobserved, exogenous variables
Norms
e20
e21
e2
e7
ease

e12
e3
e8
e4
e10
resd2
resd1

Variable counts

Number of variables in your model:	24
Number of observed variables:	9
Number of unobserved variables:	15
Number of exogenous variables:	13
Number of endogenous variables:	11

Parameter summary

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	15	0	0	0	0	15
Labeled	0	0	0	0	0	0
Unlabeled	9	0	13	0	0	22
Total	24	0	13	0	0	37

Assessment of normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
ease6	1	4	-0.055	-0.424	-0.635	-2.449
bi4	1	3	-0.083	-0.641	-0.547	-2.108
useful8	1	3	-0.019	-0.148	-1.235	-4.764
bi3	1	3	0.203	1.566	-0.777	-2.997
ease8	1	4	0.063	0.482	-0.472	-1.819
useful7	1	3	0.118	0.912	-0.635	-2.451
bi2	1	3	0.018	0.139	-0.887	-3.42
SN2	1	4	-0.05	-0.382	-0.19	-0.734
SN1	1	4	0.219	1.687	-0.669	-2.582
Multivariate					4.984	3.346

Sample Moments

Sample Correlations

	ease6	bi4	useful8	bi3	ease8	useful7	bi2	SN2	SN1
ease6	1								
bi4	0.282	1							
useful8	0.359	0.205	1						
bi3	0.28	0.57	0.269	1					
ease8	0.588	0.251	0.344	0.297	1				
useful7	0.411	0.288	0.778	0.289	0.343	1			
bi2	0.188	0.517	0.194	0.46	0.202	0.182	1		
SN2	0.129	0.232	0.131	0.21	0.126	0.11	0.199	1	
SN1	0.096	0.169	0.085	0.176	0.043	0.073	0.176	0.844	1

Condition number =
22.140
Eigenvalues
3.285 1.751 1.284 .940 .540 .452 .391 .209 .148

Notes for Model

Computation of degrees of freedom

Number of distinct sample moments:	45
Number of distinct parameters to be estimated:	22
Degrees of freedom (45 - 22):	23

Result

Minimum was achieved
Chi-square = 33.916
Degrees of freedom = 23
Probability level = .066

Estimates

Scalar Estimates

Maximum Likelihood Estimates

Regression Weights:

			Estimate	S.E.	C.R.	P	Label
usefulness	<---	ease	0.513	0.067	7.7	***	par_6
intention	<---	Norms	0.157	0.045	3.477	***	par_7
intention	<---	usefulness	0.15	0.062	2.414	0.016	par_8
intention	<---	ease	0.253	0.07	3.61	***	par_9
SN1	<---	Norms	0.981	0.15	6.547	***	par_1
SN2	<---	Norms	1				
bi2	<---	intention	1				
useful7	<---	usefulness	1				
ease8	<---	ease	0.915	0.105	8.738	***	par_2
bi3	<---	intention	1.108	0.111	9.984	***	par_3
useful8	<---	usefulness	0.826	0.069	12.057	***	par_4
bi4	<---	intention	1.14	0.11	10.39	***	par_5
ease6	<---	ease	1				

Standardized Regression Weights:

			Estimate
usefulness	<---	ease	0.534
intention	<---	Norms	0.235
intention	<---	usefulness	0.183
intention	<---	ease	0.323
SN1	<---	Norms	0.846
SN2	<---	Norms	0.998
bi2	<---	intention	0.632
useful7	<---	usefulness	0.933
ease8	<---	ease	0.727
bi3	<---	intention	0.726
useful8	<---	usefulness	0.834
bi4	<---	intention	0.784
ease6	<---	ease	0.808

Variances:

	Estimate	S.E.	C.R.	P	Label
Norms	0.421	0.07	5.99	***	par_10
ease	0.305	0.045	6.741	***	par_11
resd2	0.201	0.027	7.379	***	par_12
resd1	0.139	0.025	5.643	***	par_13
e20	0.161	0.062	2.618	0.009	par_14
e21	0.002	0.063	0.028	0.978	par_15
e2	0.281	0.026	10.816	***	par_16
e7	0.042	0.021	2.012	0.044	par_17
e12	0.228	0.031	7.312	***	par_18
e3	0.206	0.024	8.637	***	par_19
e8	0.084	0.015	5.43	***	par_20
e4	0.152	0.022	6.972	***	par_21
e10	0.162	0.033	4.84	***	par_22

Squared Multiple Correlations:

	Estimate
usefulness	0.286
intention	0.256
ease6	0.653
bi4	0.615
useful8	0.696
bi3	0.527
ease8	0.528
useful7	0.87
bi2	0.4
SN2	0.996
SN1	0.715

Implied (for all variables) Covariance:

	ease	Norms	usefulness	intention	ease6	bi4	useful8
ease	0.305						
Norms	0	0.421					
usefulness	0.156	0	0.281				
intention	0.1	0.066	0.082	0.187			
ease6	0.305	0	0.156	0.1	0.467		
bi4	0.115	0.075	0.093	0.213	0.115	0.395	
useful8	0.129	0	0.232	0.067	0.129	0.077	0.275
bi3	0.111	0.073	0.09	0.207	0.111	0.236	0.075
ease8	0.279	0	0.143	0.092	0.279	0.105	0.118
useful7	0.156	0	0.281	0.082	0.156	0.093	0.232
bi2	0.1	0.066	0.082	0.187	0.1	0.213	0.067
SN2	0	0.421	0	0.066	0	0.075	0
SN1	0	0.413	0	0.065	0	0.074	0

	bi3	ease8	useful7	bi2	SN2	SN1
ease						
Norms						
usefulness						
intention						
ease6						
bi4						
useful8						
bi3	0.435					
ease8	0.102	0.483				
useful7	0.09	0.143	0.323			
bi2	0.207	0.092	0.082	0.468		
SN2	0.073	0	0	0.066	0.422	
SN1	0.072	0	0	0.065	0.413	0.566

Implied (for all variables) Correlations:

	ease	Norms	usefulness	intention	ease6	bi4	useful8
ease	1						
Norms	0	1					
usefulness	0.534	0	1				
intention	0.421	0.235	0.356	1			
ease6	0.808	0	0.432	0.34	1		
bi4	0.33	0.184	0.279	0.784	0.267	1	
useful8	0.446	0	0.834	0.297	0.36	0.233	1
bi3	0.306	0.171	0.258	0.726	0.247	0.569	0.215
ease8	0.727	0	0.389	0.306	0.588	0.24	0.324
useful7	0.498	0	0.933	0.332	0.403	0.26	0.778
bi2	0.266	0.149	0.225	0.632	0.215	0.496	0.188
SN2	0	0.998	0	0.234	0	0.184	0
SN1	0	0.846	0	0.199	0	0.156	0

	bi3	ease8	useful7	bi2	SN2	SN1
ease						
Norms						
usefulness						
intention						
ease6						
bi4						
useful8						
bi3	1					
ease8	0.222	1				
useful7	0.241	0.362	1			
bi2	0.459	0.193	0.21	1		
SN2	0.17	0	0	0.148	1	
SN1	0.144	0	0	0.126	0.844	1

Standardized Residual Covariance:

	ease6	bi4	useful8	bi3	ease8	useful7	bi2	SN2	SN1
ease6	0								
bi4	0.334	0.25							
useful8	-0.017	-0.481	0						
bi3	0.643	0.18	1.019	0.214					
ease8	0	0.244	0.351	1.429	0				
useful7	0.139	0.56	0	0.927	-0.336	0			
bi2	-0.47	0.491	0.133	0.132	0.185	-0.491	0.162		
SN2	2.436	0.931	2.475	0.767	2.385	2.085	0.963	0	
SN1	1.805	0.274	1.608	0.626	0.818	1.383	0.956	0	0

Factor Score Weights

	ease6	bi4	useful8	bi3	ease8	useful7	bi2	SN2	SN1
ease	0.423	0.038	0.043	0.027	0.275	0.104	0.018	-0.014	0
Norms	0	0.001	0	0	0	0	0	0.986	0.01
usefulness	0.027	0.011	0.269	0.008	0.018	0.649	0.005	-0.004	0
intention	0.032	0.3	0.015	0.215	0.021	0.035	0.143	0.043	0

Total Effects

	ease	Norms	usefulness	intention
usefulness	0.513	0	0	0
intention	0.33	0.157	0.15	0
ease6	1	0	0	0
bi4	0.376	0.179	0.17	1.14
useful8	0.424	0	0.826	0
bi3	0.365	0.174	0.166	1.108
ease8	0.915	0	0	0
useful7	0.513	0	1	0
bi2	0.33	0.157	0.15	1
SN2	0	1	0	0
SN1	0	0.981	0	0

Standardized Total Effects

	ease	Norms	usefulness	intention
usefulness	0.534	0	0	0
intention	0.421	0.235	0.183	0
ease6	0.808	0	0	0
bi4	0.33	0.184	0.144	0.784
useful8	0.446	0	0.834	0
bi3	0.306	0.171	0.133	0.726
ease8	0.727	0	0	0
useful7	0.498	0	0.933	0
bi2	0.266	0.149	0.116	0.632
SN2	0	0.998	0	0
SN1	0	0.846	0	0

Direct Effects

	ease	Norms	usefulness	intention
usefulness	0.513	0	0	0
intention	0.253	0.157	0.15	0
ease6	1	0	0	0
bi4	0	0	0	1.14
useful8	0	0	0.826	0
bi3	0	0	0	1.108
ease8	0.915	0	0	0
useful7	0	0	1	0
bi2	0	0	0	1
SN2	0	1	0	0
SN1	0	0.981	0	0

Standardized Direct Effects

	ease	Norms	usefulness	intention
usefulness	0.534	0	0	0
intention	0.323	0.235	0.183	0
ease6	0.808	0	0	0
bi4	0	0	0	0.784
useful8	0	0	0.834	0
bi3	0	0	0	0.726
ease8	0.727	0	0	0
useful7	0	0	0.933	0
bi2	0	0	0	0.632
SN2	0	0.998	0	0
SN1	0	0.846	0	0

Indirect Effects

	ease	Norms	usefulness	intention
usefulness	0	0	0	0
intention	0.077	0	0	0
ease6	0	0	0	0
bi4	0.376	0.179	0.17	0
useful8	0.424	0	0	0
bi3	0.365	0.174	0.166	0
ease8	0	0	0	0
useful7	0.513	0	0	0
bi2	0.33	0.157	0.15	0
SN2	0	0	0	0
SN1	0	0	0	0

Standardized Indirect Effects

	ease	Norms	usefulness	intention
usefulness	0	0	0	0
intention	0.098	0	0	0
ease6	0	0	0	0
bi4	0.33	0.184	0.144	0
useful8	0.446	0	0	0
bi3	0.306	0.171	0.133	0
ease8	0	0	0	0
useful7	0.498	0	0	0
bi2	0.266	0.149	0.116	0
SN2	0	0	0	0
SN1	0	0	0	0

Modification Indices

Covariance:

			M.I.	Par Change
Norms	<-->	ease	8.076	0.061
e8	<-->	e4	7.036	-0.022
e7	<-->	e4	4.802	0.019
e21	<-->	ease	6.892	0.03
e21	<-->	e12	5.673	0.024
e20	<-->	e12	5.415	-0.027

Variance:

			M.I.	Par Change

Regression Weights:

			M.I.	Par Change
SN2	<---	ease	6.892	0.099
SN2	<---	useful8	4.473	0.074
SN2	<---	ease8	9.588	0.082
SN1	<---	ease8	4.97	-0.069

Minimization History

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	7		-0.242	9999	1529.2	0	9999
1	e	3		-0.372	2.072	514.965	20	0.76
2	e*	0	1472.21		0.602	176.383	5	0.897
3	e	0	202.059		0.897	124.86	4	0
4	e	1		-0.025	0.517	56.066	2	0
5	e	0	825.691		0.444	36.643	9	0.854
6	e	0	125.399		0.227	34.913	2	0
7	e	0	343.675		0.072	33.934	1	1.024
8	e	0	284.04		0.032	33.916	1	0.945
9	e	0	280.851		0.003	33.916	1	1.009
10	e	0	290.879		0	33.916	1	1

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	22	33.916	23	0.066	1.475
Saturated model	45	0	0		
Independence model	9	1382.92	36	0	38.415

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.021	0.98	0.96	0.501
Saturated model	0	1		
Independence model	0.126	0.526	0.408	0.421

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0.975	0.962	0.992	0.987	0.992
Saturated model	1		1		1
Independence model	0	0	0	0	0

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	0.639	0.623	0.634
Saturated model	0	0	0
Independence model	1	0	0

NCP

Model	NCP	LO 90	HI 90
Default model	10.916	0	30.599
Saturated model	0	0	0
Independence model	1346.92	1229.04	1472.19

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	0.095	0.031	0	0.086
Saturated model	0	0	0	0
Independence model	3.885	3.783	3.452	4.135

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.037	0	0.061	0.796
Independence model	0.324	0.31	0.339	0

AIC

Model	AIC	BCC	BIC	CAIC
Default model	77.916	79.187	163.226	185.226
Saturated model	90	92.601	264.498	309.498
Independence model	1400.92	1401.44	1435.82	1444.82

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.219	0.188	0.274	0.222
Saturated model	0.253	0.253	0.253	0.26
Independence model	3.935	3.604	4.287	3.937

HOELTER

Model	HOELTER 0.05	HOELTER 0.01
Default model	370	438
Independence model	14	16

Execution time summary

Minimization:	0.016
Miscellaneous:	0.455
Bootstrap:	0
Total:	0.471

APPENDIX C

Causal model

Analysis Summary

Date and Time

Date: Thursday, September 15, 2011

Time: 4:14:27 PM

Title

Casual model, technology acceptance a: Thursday, September 15, 2011 4:14 PM

Notes for Group

The model is recursive.

Sample size = 357

Model contains the following variables

Observed, endogenous variables
iqua5
SN1
SN2
cult5
cult13
cult16
effic2
useful6
useful7
ease7
ease8
iqua7
GOV1
TOP3
TOP5
effic1
effic3

bi2
bi3
GOV5
cult22
bi4
Unobserved, endogenous variables
usefulness
ease
intention
Unobserved, exogenous variables
quality
e17
Norms
e20
e21
Culture
e23
e25
e27
efficacy
Managment
Government
e13
e6
e7
e11
e12
e19
e40
resd2
resd1
resd3
e46
e47
e52
e53
e2
e3
e56
e29
e4

Variable counts

Number of variables in your model:	56
Number of observed variables:	22
Number of unobserved variables:	34
Number of exogenous variables:	31
Number of endogenous variables:	25

Parameter summary

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	34	0	0	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	29	15	31	0	0	75
Total	63	15	31	0	0	109

Assessment of normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
bi4	1	3	-0.083	-0.641	-0.547	-2.108
cult22	1	5	-0.099	-0.767	-0.802	-3.094
GOV5	1	5	0.104	0.804	-0.597	-2.301
bi3	1	3	0.203	1.566	-0.777	-2.997
bi2	1	3	0.018	0.139	-0.887	-3.42
effic3	1	4	0.336	2.59	0.487	1.88
effic1	1	4	0.355	2.741	0.229	0.882
TOP5	1	4	0.007	0.058	-0.664	-2.561
TOP3	1	4	0.1	0.77	-0.474	-1.827
GOV1	1	5	0.09	0.693	-0.769	-2.968
iqua7	1	3	0.006	0.049	-0.275	-1.059
ease8	1	4	0.063	0.482	-0.472	-1.819
ease7	1	3	0.052	0.4	-0.719	-2.772
useful7	1	3	0.118	0.912	-0.635	-2.451
useful6	1	2	-0.243	-1.872	-1.941	-7.487
effic2	1	4	0.287	2.213	-0.188	-0.725
cult16	1	5	-0.25	-1.928	-0.347	-1.339
cult13	1	5	-0.123	-0.948	-0.569	-2.193
cult5	1	5	-0.174	-1.345	-0.506	-1.952
SN2	1	4	0.006	0.047	-0.367	-1.415
SN1	1	4	0.176	1.36	-0.744	-2.87
iqua5	1	3	-0.051	-0.394	-0.894	-3.449
Multivariate					23.876	6.941

Notes for Model

Number of distinct sample moments: 253

Number of distinct parameters to be estimated: 75

Degrees of freedom (253 - 75): 178

Result :

Minimum was achieved

Chi-square = 236.043

Degrees of freedom = 178

Probability level = .002

Estimates

Scalar Estimates

Maximum Likelihood Estimates

Regression Weights:

			Estimate	S.E.	C.R.	P	Label
ease	<---	Culture	-0.07	0.068	-1.038	0.299	par_25
ease	<---	Managment	0.159	0.077	2.081	0.037	par_26
ease	<---	Government	-0.141	0.058	-2.427	0.015	par_30
ease	<---	efficacy	0.17	0.058	2.918	0.004	par_39
ease	<---	quality	0.419	0.067	6.228	***	par_40
usefulness	<---	efficacy	-0.025	0.037	-0.679	0.497	par_22
usefulness	<---	quality	0.265	0.049	5.41	***	par_23
usefulness	<---	ease	0.215	0.047	4.544	***	par_27
usefulness	<---	Culture	-0.051	0.043	-1.188	0.235	par_41
usefulness	<---	Managment	0.101	0.05	2.044	0.041	par_42
usefulness	<---	Government	-0.108	0.038	-2.852	0.004	par_43
intention	<---	Norms	0.152	0.055	2.785	0.005	par_24
intention	<---	usefulness	0.256	0.088	2.916	0.004	par_28
intention	<---	ease	0.182	0.064	2.84	0.005	par_29
intention	<---	efficacy	0.194	0.051	3.829	***	par_36
intention	<---	Government	0.116	0.036	3.249	0.001	par_44
iqua5	<---	quality	1				
SN1	<---	Norms	1.302	0.132	9.886	***	par_1
SN2	<---	Norms	1				

cult5	<---	Culture	1				
cult13	<---	Culture	1.427	0.088	16.216	***	par_2
cult16	<---	Culture	0.991	0.068	14.629	***	par_3
effic2	<---	efficacy	1				
useful6	<---	usefulness	1				
useful7	<---	usefulness	1.338	0.11	12.141	***	par_19
ease7	<---	ease	1				
ease8	<---	ease	0.962	0.083	11.556	***	par_20
iqua7	<---	quality	0.872	0.06	14.606	***	par_21
GOV1	<---	Government	1				
TOP3	<---	Managment	1				
TOP5	<---	Managment	1.086	0.065	16.694	***	par_31
effic1	<---	efficacy	0.773	0.072	10.707	***	par_32
effic3	<---	efficacy	0.543	0.062	8.763	***	par_33
bi2	<---	intention	0.898	0.089	10.143	***	par_34
bi3	<---	intention	1				
GOV5	<---	Government	0.964	0.056	17.306	***	par_35
cult22	<---	Culture	0.918	0.069	13.273	***	par_37
bi4	<---	intention	0.999	0.088	11.323	***	par_38

Standardized Regression Weights:

			Estimate
ease	<---	Culture	-0.08
ease	<---	Managment	0.191
ease	<---	Government	-0.208
ease	<---	efficacy	0.19
ease	<---	quality	0.429
usefulness	<---	efficacy	-0.041
usefulness	<---	quality	0.402
usefulness	<---	ease	0.319
usefulness	<---	Culture	-0.086
usefulness	<---	Managment	0.181
usefulness	<---	Government	-0.236
intention	<---	Norms	0.18
intention	<---	usefulness	0.204
intention	<---	ease	0.215
intention	<---	efficacy	0.256

intention	<---	Government	0.202
iqua5	<---	quality	0.863
SN1	<---	Norms	0.843
SN2	<---	Norms	0.856
cult5	<---	Culture	0.763
cult13	<---	Culture	0.862
cult16	<---	Culture	0.783
effic2	<---	efficacy	0.847
useful6	<---	usefulness	0.789
useful7	<---	usefulness	0.923
ease7	<---	ease	0.877
ease8	<---	ease	0.804
iqua7	<---	quality	0.856
GOV1	<---	Government	0.873
TOP3	<---	Managment	0.863
TOP5	<---	Managment	0.881
effic1	<---	efficacy	0.725
effic3	<---	efficacy	0.548
bi2	<---	intention	0.642
bi3	<---	intention	0.739
GOV5	<---	Government	0.894
cult22	<---	Culture	0.718
bi4	<---	intention	0.775

Covariance:

			Estimate	S.E.	C.R.	P	Label
quality	<-->	efficacy	0.095	0.026	3.692	***	par_4
Norms	<-->	efficacy	0.046	0.024	1.867	0.062	par_5
Culture	<-->	efficacy	0.044	0.028	1.591	0.112	par_6
efficacy	<-->	Managment	0.047	0.029	1.61	0.107	par_7
efficacy	<-->	Government	-0.032	0.035	-0.923	0.356	par_8
quality	<-->	Norms	0.139	0.024	5.884	***	par_9
quality	<-->	Culture	0.114	0.026	4.478	***	par_10
quality	<-->	Managment	0.108	0.027	4.062	***	par_11
quality	<-->	Government	0.175	0.033	5.226	***	par_12
Norms	<-->	Culture	0.091	0.026	3.451	***	par_13
Norms	<-->	Managment	0.044	0.026	1.674	0.094	par_14
Norms	<-->	Government	0.167	0.034	4.936	***	par_15
Culture	<-->	Managment	0.272	0.035	7.86	***	par_16
Culture	<-->	Government	0.265	0.04	6.665	***	par_17
Managment	<-->	Government	0.378	0.045	8.464	***	par_18

Correlations:

			Estimate
quality	<-->	efficacy	0.246
Norms	<-->	efficacy	0.122
Culture	<-->	efficacy	0.103
efficacy	<-->	Managment	0.103
efficacy	<-->	Government	-0.058
quality	<-->	Norms	0.402
quality	<-->	Culture	0.292
quality	<-->	Managment	0.261
quality	<-->	Government	0.344
Norms	<-->	Culture	0.237
Norms	<-->	Managment	0.108
Norms	<-->	Government	0.336
Culture	<-->	Managment	0.593
Culture	<-->	Government	0.47
Managment	<-->	Government	0.633

Variances:

	Estimate	S.E.	C.R.	P	Label
quality	0.353	0.04	8.932	***	par_45
Norms	0.337	0.045	7.412	***	par_46
Culture	0.433	0.053	8.101	***	par_47
efficacy	0.419	0.053	7.848	***	par_48
Managment	0.486	0.052	9.304	***	par_49
Government	0.733	0.077	9.497	***	par_50
resd3	0.248	0.034	7.265	***	par_51
resd2	0.098	0.013	7.582	***	par_52
resd1	0.151	0.023	6.587	***	par_53
e17	0.121	0.022	5.637	***	par_54
e20	0.233	0.055	4.198	***	par_55
e21	0.123	0.032	3.81	***	par_56
e23	0.311	0.029	10.759	***	par_57
e25	0.306	0.039	7.841	***	par_58
e27	0.269	0.026	10.178	***	par_59
e13	0.165	0.035	4.68	***	par_60
e6	0.093	0.013	7.276	***	par_61
e7	0.048	0.02	2.456	0.014	par_62
e11	0.101	0.026	3.837	***	par_63
e12	0.171	0.027	6.441	***	par_64

e19	0.098	0.017	5.919	***	par_65
e40	0.228	0.037	6.188	***	par_66
e46	0.166	0.025	6.509	***	par_67
e47	0.166	0.029	5.725	***	par_68
e52	0.226	0.026	8.741	***	par_69
e53	0.288	0.025	11.744	***	par_70
e2	0.278	0.026	10.83	***	par_71
e3	0.2	0.023	8.754	***	par_72
e56	0.171	0.033	5.192	***	par_73
e29	0.342	0.03	11.365	***	par_74
e4	0.16	0.021	7.78	***	par_75

Squared Multiple Correlations:

	Estimate
ease	0.264
usefulness	0.362
intention	0.373
bi4	0.6
cult22	0.516
GOV5	0.8
bi3	0.547
bi2	0.412
effic3	0.301
effic1	0.525
TOP5	0.776
TOP3	0.745
GOV1	0.763
iqua7	0.732
ease8	0.646
ease7	0.77
useful7	0.851
useful6	0.623
effic2	0.718
cult16	0.613
cult13	0.743
cult5	0.582
SN2	0.732
SN1	0.711
iqua5	0.744

Implied (for all variables)

Correlations

	Govern-ment	Manage-ment	Efficacy	Culture	Norms	quality	ease	Useful-ness	Intent-ion
Government	1								
Managment	0.633	1							
efficacy	-0.058	0.103	1						
Culture	0.47	0.593	0.103	1					
Norms	0.336	0.108	0.122	0.237	1				
quality	0.344	0.261	0.246	0.292	0.402	1			
ease	0.013	0.144	0.319	0.081	0.128	0.431	1		
usefulness	-0.017	0.127	0.183	0.05	0.117	0.47	0.495	1	
intention	0.247	0.231	0.372	0.192	0.33	0.394	0.424	0.375	1
bi4	0.191	0.179	0.288	0.149	0.256	0.305	0.328	0.291	0.775
cult22	0.338	0.426	0.074	0.718	0.171	0.21	0.058	0.036	0.138
GOV5	0.894	0.566	-0.052	0.421	0.301	0.308	0.011	-0.015	0.221
bi3	0.183	0.171	0.275	0.142	0.244	0.291	0.313	0.277	0.739
bi2	0.158	0.148	0.239	0.123	0.212	0.253	0.272	0.241	0.642
effic3	-0.032	0.057	0.548	0.056	0.067	0.135	0.175	0.1	0.204
effic1	-0.042	0.075	0.725	0.075	0.088	0.178	0.231	0.133	0.27
TOP5	0.557	0.881	0.091	0.522	0.095	0.23	0.127	0.112	0.203
TOP3	0.546	0.863	0.089	0.512	0.093	0.225	0.125	0.11	0.199
GOV1	0.873	0.553	-0.051	0.411	0.294	0.3	0.011	-0.015	0.216
iqua7	0.294	0.223	0.21	0.25	0.344	0.856	0.369	0.402	0.337
ease8	0.01	0.116	0.257	0.065	0.103	0.347	0.804	0.398	0.34
ease7	0.011	0.127	0.28	0.071	0.112	0.378	0.877	0.434	0.372
useful7	-0.016	0.117	0.169	0.046	0.108	0.434	0.457	0.923	0.346
useful6	-0.014	0.1	0.144	0.039	0.092	0.371	0.391	0.789	0.296
effic2	-0.05	0.087	0.847	0.087	0.103	0.208	0.27	0.155	0.316
cult16	0.368	0.464	0.081	0.783	0.186	0.229	0.064	0.039	0.15
cult13	0.405	0.511	0.089	0.862	0.205	0.252	0.07	0.043	0.165
cult5	0.359	0.453	0.079	0.763	0.181	0.223	0.062	0.038	0.146
SN2	0.288	0.093	0.104	0.203	0.856	0.344	0.109	0.1	0.283
SN1	0.283	0.091	0.102	0.2	0.843	0.339	0.108	0.099	0.278
iqua5	0.297	0.225	0.212	0.252	0.347	0.863	0.372	0.405	0.34

	bi4	cult22	GOV5	bi3	bi2	effic3	effic1	TOP5	TOP3
Government									
Managment									
efficacy									
Culture									
Norms									
quality									
ease									
usefulness									
intention									
bi4	1								
cult22	0.107	1							
GOV5	0.171	0.302	1						
bi3	0.573	0.102	0.163	1					
bi2	0.497	0.088	0.142	0.475	1				
effic3	0.158	0.041	-0.029	0.151	0.131	1			
effic1	0.209	0.054	-0.038	0.2	0.173	0.397	1		
TOP5	0.157	0.375	0.498	0.15	0.13	0.05	0.066	1	
TOP3	0.154	0.368	0.489	0.147	0.128	0.049	0.064	0.76	1
GOV1	0.167	0.295	0.781	0.159	0.138	-0.028	-0.037	0.487	0.477
iqua7	0.261	0.18	0.263	0.249	0.216	0.115	0.153	0.197	0.193
ease8	0.264	0.047	0.009	0.252	0.218	0.141	0.186	0.102	0.1
ease7	0.288	0.051	0.01	0.275	0.239	0.154	0.203	0.111	0.109
useful7	0.268	0.033	-0.014	0.256	0.222	0.093	0.122	0.103	0.101
useful6	0.229	0.028	-0.012	0.219	0.19	0.079	0.105	0.088	0.087
effic2	0.244	0.063	-0.044	0.233	0.202	0.465	0.614	0.077	0.075
cult16	0.116	0.562	0.329	0.111	0.096	0.044	0.058	0.409	0.401
cult13	0.128	0.619	0.362	0.122	0.106	0.049	0.064	0.45	0.441
cult5	0.113	0.548	0.321	0.108	0.094	0.043	0.057	0.399	0.391
SN2	0.219	0.146	0.257	0.209	0.181	0.057	0.075	0.082	0.08
SN1	0.216	0.144	0.253	0.206	0.179	0.056	0.074	0.08	0.079
iqua5	0.263	0.181	0.265	0.251	0.218	0.116	0.154	0.198	0.194

	GOV1	iqua7	ease8	ease7	useful7	useful6	effic2	cult16
Government								
Managment								
efficacy								
Culture								
Norms								
quality								
ease								
usefulness								
intention								
bi4								
cult22								
GOV5								
bi3								
bi2								
effic3								
effic1								
TOP5								
TOP3								
GOV1	1							
iqua7	0.257	1						
ease8	0.009	0.297	1					
ease7	0.01	0.324	0.705	1				
useful7	-0.014	0.371	0.367	0.401	1			
useful6	-0.012	0.317	0.314	0.343	0.728	1		
effic2	-0.043	0.178	0.217	0.237	0.143	0.122	1	
cult16	0.322	0.196	0.051	0.056	0.036	0.031	0.068	1
cult13	0.354	0.215	0.056	0.061	0.039	0.034	0.075	0.675
cult5	0.314	0.191	0.05	0.054	0.035	0.03	0.067	0.597
SN2	0.251	0.294	0.088	0.096	0.092	0.079	0.088	0.159
SN1	0.247	0.29	0.086	0.094	0.091	0.078	0.087	0.157
iqua5	0.259	0.738	0.299	0.326	0.374	0.32	0.18	0.197

	cult13	cult5	SN2	SN1	iqua5
Government					
Managment					
efficacy					
Culture					
Norms					
quality					
ease					
usefulness					
intention					
bi4					
cult22					
GOV5					
bi3					
bi2					
effic3					
effic1					
TOP5					
TOP3					
GOV1					
iqua7					
ease8					
ease7					
useful7					
useful6					
effic2					
cult16					
cult13	1				
cult5	0.657	1			
SN2	0.175	0.155	1		
SN1	0.172	0.153	0.721	1	
iqua5	0.217	0.192	0.297	0.292	1

Implied Correlations

	bi4	cult22	GOV5	bi3	bi2	effic3	effic1	TOP5	TOP3	GOV1
bi4	1									
cult22	0.107	1								
GOV5	0.171	0.302	1							
bi3	0.573	0.102	0.163	1						
bi2	0.497	0.088	0.142	0.475	1					
effic3	0.158	0.041	-0.029	0.151	0.131	1				
effic1	0.209	0.054	-0.038	0.2	0.173	0.397	1			
TOP5	0.157	0.375	0.498	0.15	0.13	0.05	0.066	1		
TOP3	0.154	0.368	0.489	0.147	0.128	0.049	0.064	0.76	1	
GOV1	0.167	0.295	0.781	0.159	0.138	-0.028	-0.037	0.487	0.477	1
iqua7	0.261	0.18	0.263	0.249	0.216	0.115	0.153	0.197	0.193	0.257
ease8	0.264	0.047	0.009	0.252	0.218	0.141	0.186	0.102	0.1	0.009
ease7	0.288	0.051	0.01	0.275	0.239	0.154	0.203	0.111	0.109	0.01
useful7	0.268	0.033	-0.014	0.256	0.222	0.093	0.122	0.103	0.101	-0.014
useful6	0.229	0.028	-0.012	0.219	0.19	0.079	0.105	0.088	0.087	-0.012
effic2	0.244	0.063	-0.044	0.233	0.202	0.465	0.614	0.077	0.075	-0.043
cult16	0.116	0.562	0.329	0.111	0.096	0.044	0.058	0.409	0.401	0.322
cult13	0.128	0.619	0.362	0.122	0.106	0.049	0.064	0.45	0.441	0.354
cult5	0.113	0.548	0.321	0.108	0.094	0.043	0.057	0.399	0.391	0.314
SN2	0.219	0.146	0.257	0.209	0.181	0.057	0.075	0.082	0.08	0.251
SN1	0.216	0.144	0.253	0.206	0.179	0.056	0.074	0.08	0.079	0.247
iqua5	0.263	0.181	0.265	0.251	0.218	0.116	0.154	0.198	0.194	0.259

	Iqua7	Ease8	Ease7	Useful7	Useful6	Effic2	Cult16	Cult13	Cult5	SN2	SN1	Iqua5
bi4												
cult22												
GOV5												
bi3												
bi2												
effic3												
effic1												
TOP5												
TOP3												
GOV1												
iqua7	1											
ease8	0.297	1										
ease7	0.324	0.705	1									
useful7	0.371	0.367	0.401	1								
useful6	0.317	0.314	0.343	0.728	1							
effic2	0.178	0.217	0.237	0.143	0.122	1						
cult16	0.196	0.051	0.056	0.036	0.031	0.068	1					
cult13	0.215	0.056	0.061	0.039	0.034	0.075	0.675	1				
cult5	0.191	0.05	0.054	0.035	0.03	0.067	0.597	0.657	1			
SN2	0.294	0.088	0.096	0.092	0.079	0.088	0.159	0.175	0.155	1		
SN1	0.29	0.086	0.094	0.091	0.078	0.087	0.157	0.172	0.153	0.721	1	
iqua5	0.738	0.299	0.326	0.374	0.32	0.18	0.197	0.217	0.192	0.297	0.292	1

Standardized Residual Covariance

	bi4	cult22	GOV5	bi3	bi2	effic3	effic1	TOP5	TOP3	GOV1
bi4	0.04									
cult22	1.17	0								
GOV5	-1.336	-0.676	0							
bi3	-0.012	-0.899	0.203	0.036						
bi2	0.356	0.706	0.304	-0.227	0.027					
effic3	0.036	-0.817	-0.612	1.844	0.073	0				
effic1	-0.315	0.167	0.414	-0.09	-0.963	-0.107	0			
TOP5	0.059	0.109	0.021	1.128	0.207	1.054	-0.545	0		
TOP3	-0.331	0.051	0.286	1.01	-0.286	0.378	-0.347	-0.008	0	
GOV1	0.22	0.639	-0.001	-0.167	1.217	-0.857	-1.01	-0.173	-0.202	0
iqua7	0.103	-0.375	0.203	0.432	0.101	0.032	-0.65	0.429	0.601	0.383
ease8	-0.227	-0.617	0.17	0.84	-0.297	0.209	0.001	-0.628	-0.429	-0.553
ease7	-0.168	-0.837	0.365	-0.113	-0.108	0.44	-0.472	0.185	0.392	-0.19
useful7	0.376	-1.488	-0.604	0.615	-0.732	1.536	-0.824	-0.33	-0.077	0.055
useful6	-0.054	-0.558	0.417	0.29	-0.202	1.143	-0.272	0.417	1.41	0.818
effic2	0.027	1.362	0.047	-0.1	-0.061	-0.124	0.096	0.087	-0.1	0.638
cult16	1.494	0.146	0.443	1.592	1.565	0.014	0.224	0.817	-0.034	0.571
cult13	0.399	0.154	-0.094	-0.243	-0.263	-1.76	-1.558	-0.145	-0.348	0.419
cult5	1.642	-0.418	-0.906	1.257	1.379	-0.55	-0.534	0.2	-0.408	-0.847
SN2	0.428	-0.041	0.481	0.82	0.088	-1.017	0.827	0.671	0.214	0.047
SN1	-0.49	-1.529	-0.289	-0.105	0.343	-1.202	1.367	-0.293	-1.051	-0.039
iqua5	-0.039	-1.543	-0.48	0.933	0.149	1.534	-0.41	-0.508	-0.467	-0.048

	iqua7	ease8	ease7	useful7	useful6	effic2	cult16	cult13	cult5	SN2	SN1	iqua5
bi4												
cult22												
GOV5												
bi3												
bi2												
effic3												
effic1												
TOP5												
TOP3												
GOV1												
iqua7	0											
ease8	0.716	0										
ease7	-0.446	0.004	0									
useful7	-0.456	-0.419	0.111	0								
useful6	-0.714	-0.412	0.662	0.003	0							
effic2	0.212	-0.292	0.282	-0.057	-0.126	0						
cult16	0.562	-0.946	-0.603	0.574	0.314	1.092	0					
cult13	0.458	-0.385	0.678	-0.606	-0.547	-0.319	-0.224	0				
cult5	0.877	-0.277	1.342	1.38	0.901	0.504	-0.019	0.242	0			
SN2	-0.144	-0.092	0.35	0.88	1.923	-0.541	0.993	0.237	1.247	0		
SN1	0.298	-0.454	-0.523	1.679	2.533	0.121	0.527	-0.94	-0.736	0.003	0	
iqua5	0.024	0.263	-0.159	0.273	0.456	-0.158	0.012	-0.543	0.321	-0.784	0.155	0

Total Effects

	Govern-ment	Manage-ment	efficacy	Culture	Norms	quality	ease	Useful-ness	intention
ease	-0.141	0.159	0.17	-0.07	0	0.419	0	0	0
usefulness	-0.138	0.136	0.012	-0.066	0	0.355	0.215	0	0
intention	0.055	0.064	0.228	-0.03	0.152	0.167	0.237	0.256	0
bi4	0.055	0.064	0.228	-0.03	0.152	0.167	0.237	0.256	0.999
cult22	0	0	0	0.918	0	0	0	0	0
GOV5	0.964	0	0	0	0	0	0	0	0
bi3	0.055	0.064	0.228	-0.03	0.152	0.167	0.237	0.256	1
bi2	0.049	0.057	0.205	-0.027	0.137	0.15	0.213	0.23	0.898
effic3	0	0	0.543	0	0	0	0	0	0
effic1	0	0	0.773	0	0	0	0	0	0
TOP5	0	1.086	0	0	0	0	0	0	0
TOP3	0	1	0	0	0	0	0	0	0
GOV1	1	0	0	0	0	0	0	0	0
iqua7	0	0	0	0	0	0.872	0	0	0
ease8	-0.135	0.153	0.164	-0.068	0	0.403	0.962	0	0
ease7	-0.141	0.159	0.17	-0.07	0	0.419	1	0	0
useful7	-0.185	0.182	0.016	-0.088	0	0.475	0.288	1.338	0
useful6	-0.138	0.136	0.012	-0.066	0	0.355	0.215	1	0
effic2	0	0	1	0	0	0	0	0	0
cult16	0	0	0	0.991	0	0	0	0	0
cult13	0	0	0	1.427	0	0	0	0	0
cult5	0	0	0	1	0	0	0	0	0
SN2	0	0	0	0	1	0	0	0	0
SN1	0	0	0	0	1.302	0	0	0	0
iqua5	0	0	0	0	0	1	0	0	0

Standardized Total Effects

	Govern-ment	Manage-ment	efficacy	Culture	Norms	quality	ease	Usefulness	intention
ease	-0.208	0.191	0.19	-0.08	0	0.429	0	0	0
usefulness	-0.302	0.242	0.019	-0.111	0	0.539	0.319	0	0
intention	0.096	0.09	0.301	-0.04	0.18	0.202	0.28	0.204	0
bi4	0.074	0.07	0.233	-0.031	0.139	0.157	0.217	0.158	0.775
cult22	0	0	0	0.718	0	0	0	0	0
GOV5	0.894	0	0	0	0	0	0	0	0
bi3	0.071	0.067	0.223	-0.029	0.133	0.15	0.207	0.151	0.739
bi2	0.061	0.058	0.193	-0.026	0.115	0.13	0.18	0.131	0.642
effic3	0	0	0.548	0	0	0	0	0	0
effic1	0	0	0.725	0	0	0	0	0	0
TOP5	0	0.881	0	0	0	0	0	0	0
TOP3	0	0.863	0	0	0	0	0	0	0
GOV1	0.873	0	0	0	0	0	0	0	0
iqua7	0	0	0	0	0	0.856	0	0	0
ease8	-0.167	0.154	0.153	-0.064	0	0.345	0.804	0	0
ease7	-0.182	0.168	0.167	-0.07	0	0.377	0.877	0	0
useful7	-0.279	0.223	0.018	-0.102	0	0.497	0.294	0.923	0
useful6	-0.238	0.191	0.015	-0.088	0	0.425	0.252	0.789	0
effic2	0	0	0.847	0	0	0	0	0	0
cult16	0	0	0	0.783	0	0	0	0	0
cult13	0	0	0	0.862	0	0	0	0	0
cult5	0	0	0	0.763	0	0	0	0	0
SN2	0	0	0	0	0.856	0	0	0	0
SN1	0	0	0	0	0.843	0	0	0	0
iqua5	0	0	0	0	0	0.863	0	0	0

Direct Effects

	Govern-ment	Manage-ment	efficacy	Culture	Norms	quality	ease	Usefulness	intention
ease	-0.141	0.159	0.17	-0.07	0	0.419	0	0	0
usefulness	-0.108	0.101	-0.025	-0.051	0	0.265	0.215	0	0
intention	0.116	0	0.194	0	0.152	0	0.182	0.256	0
bi4	0	0	0	0	0	0	0	0	0.999
cult22	0	0	0	0.918	0	0	0	0	0
GOV5	0.964	0	0	0	0	0	0	0	0
bi3	0	0	0	0	0	0	0	0	1
bi2	0	0	0	0	0	0	0	0	0.898
effic3	0	0	0.543	0	0	0	0	0	0
effic1	0	0	0.773	0	0	0	0	0	0
TOP5	0	1.086	0	0	0	0	0	0	0
TOP3	0	1	0	0	0	0	0	0	0
GOV1	1	0	0	0	0	0	0	0	0
iqua7	0	0	0	0	0	0.872	0	0	0
ease8	0	0	0	0	0	0	0.962	0	0
ease7	0	0	0	0	0	0	1	0	0
useful7	0	0	0	0	0	0	0	1.338	0
useful6	0	0	0	0	0	0	0	1	0
effic2	0	0	1	0	0	0	0	0	0
cult16	0	0	0	0.991	0	0	0	0	0
cult13	0	0	0	1.427	0	0	0	0	0
cult5	0	0	0	1	0	0	0	0	0
SN2	0	0	0	0	1	0	0	0	0
SN1	0	0	0	0	1.302	0	0	0	0
iqua5	0	0	0	0	0	1	0	0	0

Standardized Direct Effects

	Govern-ment	Manage-ment	efficacy	Culture	Norms	quality	ease	Usefulness	intention
ease	-0.208	0.191	0.19	-0.08	0	0.429	0	0	0
usefulness	-0.236	0.181	-0.041	-0.086	0	0.402	0.319	0	0
intention	0.202	0	0.256	0	0.18	0	0.215	0.204	0
bi4	0	0	0	0	0	0	0	0	0.775
cult22	0	0	0	0.718	0	0	0	0	0
GOV5	0.894	0	0	0	0	0	0	0	0
bi3	0	0	0	0	0	0	0	0	0.739
bi2	0	0	0	0	0	0	0	0	0.642
effic3	0	0	0.548	0	0	0	0	0	0
effic1	0	0	0.725	0	0	0	0	0	0
TOP5	0	0.881	0	0	0	0	0	0	0
TOP3	0	0.863	0	0	0	0	0	0	0
GOV1	0.873	0	0	0	0	0	0	0	0
iqua7	0	0	0	0	0	0.856	0	0	0
ease8	0	0	0	0	0	0	0.804	0	0
ease7	0	0	0	0	0	0	0.877	0	0
useful7	0	0	0	0	0	0	0	0.923	0
useful6	0	0	0	0	0	0	0	0.789	0
effic2	0	0	0.847	0	0	0	0	0	0
cult16	0	0	0	0.783	0	0	0	0	0
cult13	0	0	0	0.862	0	0	0	0	0
cult5	0	0	0	0.763	0	0	0	0	0
SN2	0	0	0	0	0.856	0	0	0	0
SN1	0	0	0	0	0.843	0	0	0	0
iqua5	0	0	0	0	0	0.863	0	0	0

Indirect Effects

	Govern-ment	Manage-ment	efficacy	Culture	Norms	quality	ease	Usefulness	Intention
ease	0	0	0	0	0	0	0	0	0
usefulness	-0.03	0.034	0.037	-0.015	0	0.09	0	0	0
intention	-0.061	0.064	0.034	-0.03	0	0.167	0.055	0	0
bi4	0.055	0.064	0.228	-0.03	0.152	0.167	0.237	0.256	0
cult22	0	0	0	0	0	0	0	0	0
GOV5	0	0	0	0	0	0	0	0	0
bi3	0.055	0.064	0.228	-0.03	0.152	0.167	0.237	0.256	0
bi2	0.049	0.057	0.205	-0.027	0.137	0.15	0.213	0.23	0
effic3	0	0	0	0	0	0	0	0	0
effic1	0	0	0	0	0	0	0	0	0
TOP5	0	0	0	0	0	0	0	0	0
TOP3	0	0	0	0	0	0	0	0	0
GOV1	0	0	0	0	0	0	0	0	0
iqua7	0	0	0	0	0	0	0	0	0
ease8	-0.135	0.153	0.164	-0.068	0	0.403	0	0	0
ease7	-0.141	0.159	0.17	-0.07	0	0.419	0	0	0
useful7	-0.185	0.182	0.016	-0.088	0	0.475	0.288	0	0
useful6	-0.138	0.136	0.012	-0.066	0	0.355	0.215	0	0
effic2	0	0	0	0	0	0	0	0	0
cult16	0	0	0	0	0	0	0	0	0
cult13	0	0	0	0	0	0	0	0	0
cult5	0	0	0	0	0	0	0	0	0
SN2	0	0	0	0	0	0	0	0	0
SN1	0	0	0	0	0	0	0	0	0
iqua5	0	0	0	0	0	0	0	0	0

Standardized Indirect Effects

	Govern-ment	Manage-ment	efficacy	Culture	Norms	quality	ease	Usefulness	Intention
ease	0	0	0	0	0	0	0	0	0
usefulness	-0.066	0.061	0.061	-0.025	0	0.137	0	0	0
intention	-0.106	0.09	0.045	-0.04	0	0.202	0.065	0	0
bi4	0.074	0.07	0.233	-0.031	0.139	0.157	0.217	0.158	0
cult22	0	0	0	0	0	0	0	0	0
GOV5	0	0	0	0	0	0	0	0	0
bi3	0.071	0.067	0.223	-0.029	0.133	0.15	0.207	0.151	0
bi2	0.061	0.058	0.193	-0.026	0.115	0.13	0.18	0.131	0
effic3	0	0	0	0	0	0	0	0	0
effic1	0	0	0	0	0	0	0	0	0
TOP5	0	0	0	0	0	0	0	0	0
TOP3	0	0	0	0	0	0	0	0	0
GOV1	0	0	0	0	0	0	0	0	0
iqua7	0	0	0	0	0	0	0	0	0
ease8	-0.167	0.154	0.153	-0.064	0	0.345	0	0	0
ease7	-0.182	0.168	0.167	-0.07	0	0.377	0	0	0
useful7	-0.279	0.223	0.018	-0.102	0	0.497	0.294	0	0
useful6	-0.238	0.191	0.015	-0.088	0	0.425	0.252	0	0
effic2	0	0	0	0	0	0	0	0	0
cult16	0	0	0	0	0	0	0	0	0
cult13	0	0	0	0	0	0	0	0	0
cult5	0	0	0	0	0	0	0	0	0
SN2	0	0	0	0	0	0	0	0	0
SN1	0	0	0	0	0	0	0	0	0
iqua5	0	0	0	0	0	0	0	0	0

Modification Indices

Covariances:

			M.I.	Par Change
resd2	<-->	Norms	6.092	0.027
e4	<-->	Culture	4.109	0.03
e56	<-->	e4	9.873	-0.044
e56	<-->	e29	4.058	-0.037
e3	<-->	Managment	4.18	0.032
e3	<-->	e29	7.224	-0.046
e53	<-->	Managment	5.04	0.038
e53	<-->	e3	6.902	0.04
e52	<-->	Norms	6.093	0.04
e52	<-->	e56	8.395	0.045
e40	<-->	e4	5.35	0.035
e40	<-->	e29	5.383	0.046
e40	<-->	e3	5.651	-0.038
e40	<-->	e52	10.287	-0.054
e12	<-->	e19	4.813	0.022
e6	<-->	Norms	5.492	0.024
e6	<-->	e46	5.336	0.021
e13	<-->	e40	8.174	0.05
e25	<-->	efficacy	4.768	-0.055
e25	<-->	e11	4.05	0.033
e23	<-->	Government	5.761	-0.055
e21	<-->	e23	4.78	0.033
e20	<-->	resd2	4.162	0.024
e17	<-->	e53	8.248	0.038

Variances:

(Group number 1 - Default model)

	M.I.	Par Change

Regression Weights:

(Group number 1 - Default model)

			M.I.	Par Change
usefulness	<---	Norms	4.129	0.072
cult22	<---	usefulness	4.207	-0.184
cult22	<---	useful7	4.898	-0.129
GOV5	<---	bi4	6.524	-0.118
bi3	<---	effic3	5.471	0.099
effic3	<---	bi3	4.648	0.096
GOV1	<---	effic1	4.209	-0.093
useful6	<---	Norms	4.2	0.069
useful6	<---	TOP3	4.554	0.047
useful6	<---	SN1	4.322	0.042
effic2	<---	cult22	4.251	0.073
cult16	<---	intention	4.138	0.141
cult16	<---	bi3	4.567	0.098
cult13	<---	efficacy	5.752	-0.148
cult13	<---	bi2	4.616	-0.113
cult13	<---	effic3	5.462	-0.131
cult13	<---	effic1	5.639	-0.124
cult5	<---	usefulness	5.712	0.209
cult5	<---	useful7	5.883	0.138
SN2	<---	cult5	6.219	0.071
SN1	<---	cult22	4.661	-0.083
SN1	<---	cult5	5.77	-0.09
iqua5	<---	effic3	5.53	0.087

Minimization History:(Default Model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	23		-0.512	9999	4081.77	0	9999
1	e	11		-0.212	2.662	2031.51	20	0.657
2	e*	3		-0.47	1.449	1117.39	5	0.678
3	e	0	1012.5		0.676	543.895	4	0.876
4	e	0	359.911		1.059	341.475	2	0
5	e	0	129.114		0.456	251.645	1	1.128
6	e	0	99.08		0.153	237.321	1	1.152
7	e	0	89.094		0.038	236.062	1	1.075
8	e	0	85.364		0.005	236.043	1	1.012
9	e	0	85.472		0	236.043	1	1

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	75	236.043	178	0.002	1.326
Saturated model	253	0	0		
Independence model	22	3804.29	231	0	16.469

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.02	0.943	0.919	0.663
Saturated model	0	1		
Independence model	0.164	0.4	0.343	0.365

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0.938	0.919	0.984	0.979	0.984
Saturated model	1		1		1
Independence model	0	0	0	0	0

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	0.771	0.723	0.758
Saturated model	0	0	0
Independence model	1	0	0

NCP

Model	NCP	LO 90	HI 90
Default model	58.043	22.154	102.026
Saturated model	0	0	0
Independence model	3573.29	3377.06	3776.82

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	0.663	0.163	0.062	0.287
Saturated model	0	0	0	0
Independence model	10.686	10.037	9.486	10.609

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.03	0.019	0.04	1
Independence model	0.208	0.203	0.214	0

AIC

Model	AIC	BCC	BIC	CAIC
Default model	386.043	396.404	676.873	751.873
Saturated model	506	540.949	1487.07	1740.07
Independence model	3848.29	3851.33	3933.6	3955.6

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.084	0.984	1.208	1.113
Saturated model	1.421	1.421	1.421	1.52
Independence model	10.81	10.259	11.382	10.818

HOELTER

Model	HOELTER 0.05	HOELTER 0.01
Default model	317	340
Independence model	26	27

APPENDIX D

Questionnaire

استبيـــــــان

THE FACTORS INFLUENCE THE ACCEPTANCE FOR INFORMATION TECHNOLOGY AMONG YEMENIS GOVERNMENT EMPLOYEES

العوامل المؤثرة في تقبل أنظمة المعلومات بالنسبة لموظفي القطاع الحكومي

Dear sirs/madams,

This questionnaire was designed to investigate the factors influence the acceptance for information technology among Yemenis government employees and the role of the strategy on the acceptance in partial fulfillment of the requirements for the degree of doctoral of philosophy in business information systems at University Utara Malaysia (UUM). It is hope that the results will contribute to knowledge available to technical and managements' mangers in the government utilities and private companies. Therefore, we would like you to spend a little time (approximately 20 minutes) answering questions related to mentioned title above. Your answers are very important to the accuracy of our study.

INFORMATION GATHERED WILL BE KEPT STRICTLY CONFIDENTIAL

Please return the completed questionnaire using the self-addressed envelope enclosed at your earliest possible convenience.

Thank you for your help

Sami Mohammad Saleh

University Utara Malaysia
College of Business
E-mail: sssami_sssami@yahoo.com

	Gender النـــــــــوع					
	ذكرMale					
	انثىFemale					
	الخبرهThe work (job) experience في العمل					
	اقل من سنتين0-2 years					
	من 3 إلى 6سنوات3-6 years					
	من 7 إلى 10 سنوات7-10 years					
	من 11 إلى 15 سنوات11-15 years					
	أكثر من 15سنةMore than 15 Years					
	المستويThe education level is: التعليمي					
	ثانويه عامهHigh School					
	معاهدعلميهCommunity College					
	بكالوريوسUniversity Degree					
	ماجستيرMaster Degree					
	دكتوراهPhD					
	حجمThe organization size is: المنظمه					
	كبيرLarge					
	متوسطMedium					
	صغيرSmall					
	Behavior intend to use and actual usage انية الاستخدام والاستخدام الفعلي	**Strongly Agree أوافق بشدة**	**Agree أوافق**	**Normal عادي**	**Disagree لا أوافق**	**Strongly Disagree لا أوافق بشدة**
	Assuming I have access to the system, I intend to use it. إذا قمت بفتح جهاز الكمبيوتر،فاني أنوي استخدام النظام فيه					
	Given that I have access to the system, I predict that I would use it. إذا قمت بفتح جهاز الكمبيوتر،فاني أتوقع أن استخدام النظام فيه					
	In my work, if I have access to the system, I want to use it as much as possible. إذا قمت باستخدام نظام الكمبيوتر في عملي فاني أريد أن استخدمه قدر الإمكان.					
	I prefer to use the system even though I can do my work with other tools. إنني أفضل أن استخدام النظام الذي في الكمبيوتر حتى ولو كنت أستطيع القيام بعملي بواسطة أدوات أخري					
	I do not want use the system in my work. أنا لا أريد استخدام برنامج الكمبيوتر الذي في عملي					

	Perceived usefulness factor:- عامل الاستفادة When I'm using the computer:- عند استخدام الكمبيوتر -:	Strongly Agree أوافق بشدة	Agree أوافق	Normal عادي	Disagree لا أوافق	Strongly Disagree لا أوافق بشدة
	Computers enhance my work effectiveness. يُعزز الكمبيوتر من فعالية عملي					
	Computers increase my performance in my work. يزيد الكمبيوتر من أدائي في عملي.					
	Computers increase my productivity in my work. يزيد الكمبيوتر من إنتاجي في عملي.					
	Overall, I found computers to be useful in my work. بشكل عام, وجدت أن الكمبيوتر مفيد في عملي.					
	Computers enable me to accomplish tasks more quickly. يمكنني الكمبيوتر من إنجاز مهامي بشكل أسرع.					
	Computers make my work easier. يساعد الكمبيوتر على انجازي لعملي بشكل أسهل.					
	Computers give me greater control over my work in. يعطيني الكمبيوتر مقدرة أكبر في التحكم بعملي.					
	Computers improve the quality of the work I do. يُحسن الكمبيوتر من جودة العمل الذي أقوم بة.					
	Perceived Ease of Use factor:- عامل سهولة الاستخدام When I'm using the computer I found:- عند استخدام الكمبيوتر أجد:	**Strongly Agree أوافق بشدة**	**Agree أوافق**	**Normal عادي**	**Disagree لا أوافق**	**Strongly Disagree لا أوافق بشدة**
	Computers support the critical aspects of my work. يدعم الكمبيوتر النواحي المهمة في عملي.					
	Computers allow me to accomplish more work than otherwise be possible in. يسمح لي الكمبيوتر بانجاز أعمال أكثر مما كنت سأنجزه بدونه .					
	Interacting with the computers is often frustrating. التفاعل مع الكمبيوتر غالباً ما يؤدي إلى إحباط.					
	My interaction with the computers is clear and understandable. طريقتي في التفاعل مع الكمبيوتر واضحة ومفهومة.					
	Learning to operate computer applications is easy for me. تعلّم تشغيل تطبيقات الكمبيوتر هي سهلة بالنسبة لي.					
	I find it easy to get the computers to do what I want to do. أجد من السهل أن أجعل الكمبيوتر يقوم بما أريد القيام به.					
	Overall, I find computers easy to use. بشكل عام, أجد الكمبيوتر سهل الاستخدام.					
	It is easy for me to remember how to perform tasks using the computers. من السهل أن أتذكر كيفية أداء المهام من خلال استخدام الكمبيوتر.					
	The computers are rigid and inflexible to interact with. أجهزة الكمبيوتر قاسية وغير مرنة من ناحية التفاعل معها.					

	عامل التأثير الذاتيSelf-efficacy factor: ---I could use any software…. بإمكاني استخدام أي برامج كمبيوتر	Strongly Agree أوافق بشدة	Agree أوافق	Normal عادي	Disagree لا أوافق	Strongly Disagree لا أوافق بشدة
	If someone showed me how to do it first. إذا شرح لي شخص آخر كيفية استخدامه أولاً.					
	If someone else had helped me get started. إذا ساعدني شخص آخر في بدء البرامج.					
	If I had taken a short training workshop. إذا حضرت دورة تدريبية قصيرة في البرنامج.					
	If I had used similar packages before this one to do the same job. إذا استخدمت حُزم برامج مشابهة للقيام بهذا العمل.					
	If I could call someone for help if I got stuck. إذا كان بإمكاني الاتصال بشخص معيَّن عند مواجهة أي صعوبة.					
	If I had a lot of time to complete the job for which the software was provided. إذا كان لدي الوقت الكافي لإكمال العمل الذي من أجله تم استخدام البرنامج.					
	If I had never used a package like it before. إذا لم أكن قد استخدمت نهائياً برنامج مثله من قبل. حتى					
	If there was no one around to tell me what to do as I go. حتى إذا لم يتواجد شخص لإرشادي عما ينبغي القيام به خلال العمل بالبرنامج .					
	If I had only the software manuals for reference. إذا توفرت لي الكتيبات الإرشادية للاستخدام كمراجع.					
	If I had just the built-in help facility for assistance. إذا توفرت لي التعليمات الأصلية للبرنامج لمساعدتي.					
	If I had seen someone else using it before trying it myself. إذا كنت قد شاهدت شخصاً آخر يستخدم البرنامج نفسه قبل العمل عليه.					
	عامل جودة المعلوماتInformation quality factor:- I use the system in the computer because:- أقوم باستخدام نظام في الكمبيوتر لأنه-:	Strongly Agree أوافق بشدة	Agree أوافق	Normal عادي	Disagree لا أوافق	Strongly Disagree لا أوافق بشدة
	Have sufficient contents where I expect to find information. توجد محتويات كافية في المكان الذي أتوقع أن أجد فيه معلومات.					
	Provides complete information. يُقدم معلومات كافية.					
	Provides site-specific information. يُقدم معلومات في مواقع معينة.					
	Provides accurate information. يُقدم معلومات دقيقة.					
	Provides timely information. يُقدم معلومات في الوقت المناسب.					
	Provides reliable information. يُقدم معلومات يُمكن الاعتماد عليها.					
	Communicates information in an appropriate format. ينقل معلومات بشكل مناسبة.					

	Subjective norms factor:- عامل المعايير الذاتية Society influence:- تأثير المجتمع :-	Strongly Agree أوافق بشدة	Agree أوافق	Normal عادي	Disagree لا أوافق	Strongly Disagree لا أوافق بشدة
	People who influence my behavior think that I should use the system. الأشخاص الذين لهم تأثير على سلوكي يعتقدون أن عليّ استخدام النظام.					
	People who are important to me think that I should use the system. الأشخاص المهمين بالنسبة لي يعتقدون أن عليّ استخدام النظام.					

	Culture factor:- عامل الخلفية الثقافية عند استخدام نظام المعلومات في عملي, أجد أن ثقافة المجتمع لها التأثير التالي:-	Strongly Agree أوافق بشدة	Agree أوافق	Normal عادي	Disagree لا أوافق	Strongly Disagree لا أوافق بشدة
	In my organization people I work are direct and honest with each. يتحلى الأشخاص الذين أعمل معهم في نفس المؤسسة بالاستقامة والأمانة تجاه بعضهم البعض.					
	In my organization people I work with accept criticism without. يقبل الأشخاص الذين أعمل معهم في نفس المؤسسة بالنقد بصدر رحب.					
	In my organization people I work with resolve disagreements cooperatively. يتعاون الأشخاص الذين أعمل معهم في نفس المؤسسة في حل خلافاتهم.					
	In my organization people I work with function as a team. يعمل الأشخاص الذين أعمل معهم في نفس المؤسسة بروح الفريق الواحد.					
	In my organization people I work with are cooperative and considerate. الأشخاص الذين أعمل معهم في نفس المؤسسة هم أناس متعاونون ومتفهمون.					
	In my organization people I work with constructively confront problems. الأشخاص الذين أعمل معهم في نفس المؤسسة يواجهون المشاكل بطريقة بناءة.					
	In my organization people I work with are good listeners. الأشخاص الذين أعمل معهم في نفس المؤسسة يستمعون بشكل جيد إلى من يتحدث إليهم.					
	In my organization people I work with are concerned about each other. يهتم الأشخاص الذين أعمل معهم في نفس المؤسسة ببعضهم البعض.					
	In my organization labor and management have a productive working relationship. في المؤسسة التي أعمل بها, توجد علاقة عمل مثمرة بين الموظفين والإدارة.					
	This organization respects its workers. تحفزني هذه المؤسسة على بذل أقصى جهد ممكن.					
	This organization respects its workers. تحترم هذه المؤسسة موظفيها.					
	This organization treats people in a consistent and fair manner. تعامل هذه المؤسسة كافة موظفيها بشكل متساوٍ وعادل.					

	Working with this organization feels like being part of a family. العمل لدى هذه المؤسسة يجعلك تشعر بأنك جزء من عائلة.					
	In my organization there is an atmosphere of trust. توجد في هذه المؤسسة بيئة من الثقة.					
	This organization motives people to be efficient and productive. تُحفز هذه المؤسسة موظفيها على أن يكونوا فعالين ومُنتجين.					
	I get enough information to understand the big picture here. أحصل على معلومات كافية لفهم الصورة بشكل واضح.					
	In my organization when changes are made the reason why are made clear. عند إحداث أي تغييرات في المؤسسة التي أعمل بها, يتم توضيح الأسباب لقيامها بتلك التغييرات.					
	I know what is happening in work sections outside of my own. أكون مُطلعاً على ما يحدث في الإدارات الأخرى خارج إدارتي.					
	I get the information I need to do my job well. أحصل على المعلومات التي احتاجها للقيام بعملي بشكل جيد.					
	I have a say in decisions that affect my work. لي صوت مسموع في القرارات التي تؤثر على عملي.					
	I am asked to make suggestion about how to do my job better. تُطرح علي مقترحات تتعلق بكيفية تحسين عملي.					
	This organization values the ideas of worker at every level. تقدر هذه المؤسسة مقترحات موظفيها على كافة المستويات.					
	My opinion count in this organization. لرأيي وزن في هذه المؤسسة.					
	Job requirement are made clear by my superior. يُقدم رؤسائنا بتوضيح متطلبات العمل.					
	When I do a good job my superior tells me. عندما أقوم بعمل جيد, يخبرني رؤسائي بذلك.					
	My superior delegate's responsibility. يقوم المسئول بتفويض المسئولية للآخرين.					
	My superior is approachable. يمكن التحدث مع المسئول المباشر والاجتماع به.					
	My superior gives me criticism in a positive manner. ينتقدني رئيسي بشكل إيجابي.					
	My superior is a good listener. لدى رئيسي آذان صاغية للآخرين.					
	My superior tells me how I am doing. يخبرني رئيسي عن أدائي لعملي.					
	Decisions made at meeting get put into action. يتم تنفيذ القرارات التي تؤخذ في الاجتماعات.					
	Everyone takes part in discussions at meeting. كل موظف يشارك في المناقشات التي تتم خلال أي اجتماع.					
	Our discussions in meeting stay on track. تظل مناقشاتنا في الاجتماع دائماً قيد المتابعة.					
	Time in meeting is time well spent. الوقت الذي ينقضي للاجتماع هو وقت يعود بالفائدة على الجميع.					
	Meetings tap the creative potential of the people present. تُحفز الاجتماعات الإمكانيات الخلاّقة لدى الحاضرين .					

	Top management support:- دعم الإدارة العُليا **تأثير الإدارة العليا في استخدام نظام المعلومات :-**	**Strongly Agree** **أوافق بشدة**	**Agree** **أوافق**	**Normal** **عادي**	**Disagree** **لا أوافق**	**Strongly Disagree** **لا أوافق بشدة**
	Top management involvement with IS function is strong. مشاركة الإدارة العُليا في أعمال نظام المعلومات قوي.					
	Top management is interested in IS function. تعطي الإدارة العُليا اهتماماً خاصاً بنظام المعلومات.					
	Top management understands the importance of IS. تفهم الإدارة العُليا أهمية نظام المعلومات.					
	Top management supports the IS function. تدعم الإدارة العُليا وظيفة نظام المعلومات.					
	Top management considers IS as a strategic resource. تعتبر الإدارة العُليا أن نظام المعلومات مورداً إستراتيجياً.					
	Top management understands IS opportunities. تدرك الإدارة العُليا فرض نظام المعلومات.					
	Top management keeps the pressure on operating units to work with IS. تمارس الإدارة العُليا ضغطاً على وحدات التشغيل للعمل على استخدام نظام المعلومات.					
	Government support:- الدعـــــم الحكومـــــي **تأثير الحكومـــي في استخدام نظام المعلومات:-**	**Strongly Agree** **أوافق بشدة**	**Agree** **أوافق**	**Normal** **عادي**	**Disagree** **لا أوافق**	**Strongly Disagree** **لا أوافق بشدة**
	Government involvement with IS function is strong. مشاركة الحكومة في مجال نظام المعلومات هي مشاركة قوية.					
	Government is interested in IS function. تولي الحكومة اهتماماً بنظام المعلومات.					
	Government understands the importance of IS. تدرك الحكومة أهمية نظام المعلومات.					
	Government supports the IS function. تدعم الحكومة وظيفة نظام المعلومات.					
	Government considers IS as a strategic resource. تعتبر الحكومة نظام المعلومات مورد إستراتيجي.					
	Government understands IS opportunities. تدرك الحكومة الفُرص المُتاحة في مجال نظام المعلومات.					
	Government keeps the pressure on operating units to work with IS. تمارس الحكومة ضغطاً على الوحدات التشغيلية للعمل بنظام المعلومات.					